FINDINGS OF THE 1991 SCENIC RIVERS WATER QUALITY MONITORING PROGRAM

REPORT NO. 14 DRBC/NPS COOPERATIVE MONITORING PROGRAM

DELAWARE RIVER BASIN COMMISSION
IN COOPERATION WITH THE NATIONAL PARK SERVICE

MARCH 1992

Report prepared by the Delaware River Basin Commission staff, Gerald M. Hansler, Executive Director. Warren Huff, Richard Albert, and Todd W. Kratzer were the principal authors. Pauline Ditmars provided Word Processing support.

The 1991 Scenic Rivers Water Quality Monitoring Program was a cooperative effort between the Commission and two units of the National Park Service. Overall design and management of the program was performed by Todd W. Kratzer (Delaware River Basin Commission) with assistance from Deborah Drelich (Delaware Water Gap National Recreation Area).

Planning for the program was assisted by Richard Albert with the Delaware River Basin Commission, Elizabeth Johnson with the Delaware Water Gap National Recreation Area, and Malcolm Ross Jr. with the Upper Delaware Scenic and Recreational River. Persons who particpated in the field program were Don Miller, Chris Halloran and Cyndie Faunce with the Commission; Deborah Drelich, Dirk Amtower, Ramona Abraham, Mike Croll, and Marion Damiano-Nittoli with the Delaware Water Gap National Recreation Area; and Bill Weber, Rhonda Moore, Joe Sargent, Cliff Daniels, Ralph Huebner, and Vince Pareago with the Upper Delaware Scenic and Recreational River; and Suellyn Shupe and Sylvia Sievers with the Student Conservation Association.

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INTRODUCTION

This report presents the findings of the 1991 DRBC/NPS Scenic Rivers Water Quality Monitoring Program. The program is conducted by the Delaware River Basin Commission (DRBC) and the National Park Service (NPS) in the Upper Delaware Scenic and Recreational River (UDSRR) and the Delaware Water Gap National Recreation Area (DWGNRA). The program determines the status of water quality in the Upper and Middle Delaware Scenic and Recreational Rivers; the eight miles of the Delaware that separate these two components of the National Wild and Scenic Rivers System; and many of the 70 plus tributaries that flow into the Delaware River.

The 1991 program was the eighth year of the DRBC/NPS monitoring program. The cooperative program operates under a quality assurance plan approved by the U.S. Environmental Protection Agency. Earlier reports of the program are available.

PROGRAM OBJECTIVES

The 1991 Scenic Rivers Monitoring Program targeted four objectives in 1991:

1. Continue past baseline water quality monitoring;
2. Continue obtaining water quality data needed for the development of a scenic rivers water quality model and to define existing water quality along the mainstem and at tributary control points;
3. Continue tributary flow gaging efforts; and,
4. Conduct special investigations, where needed.

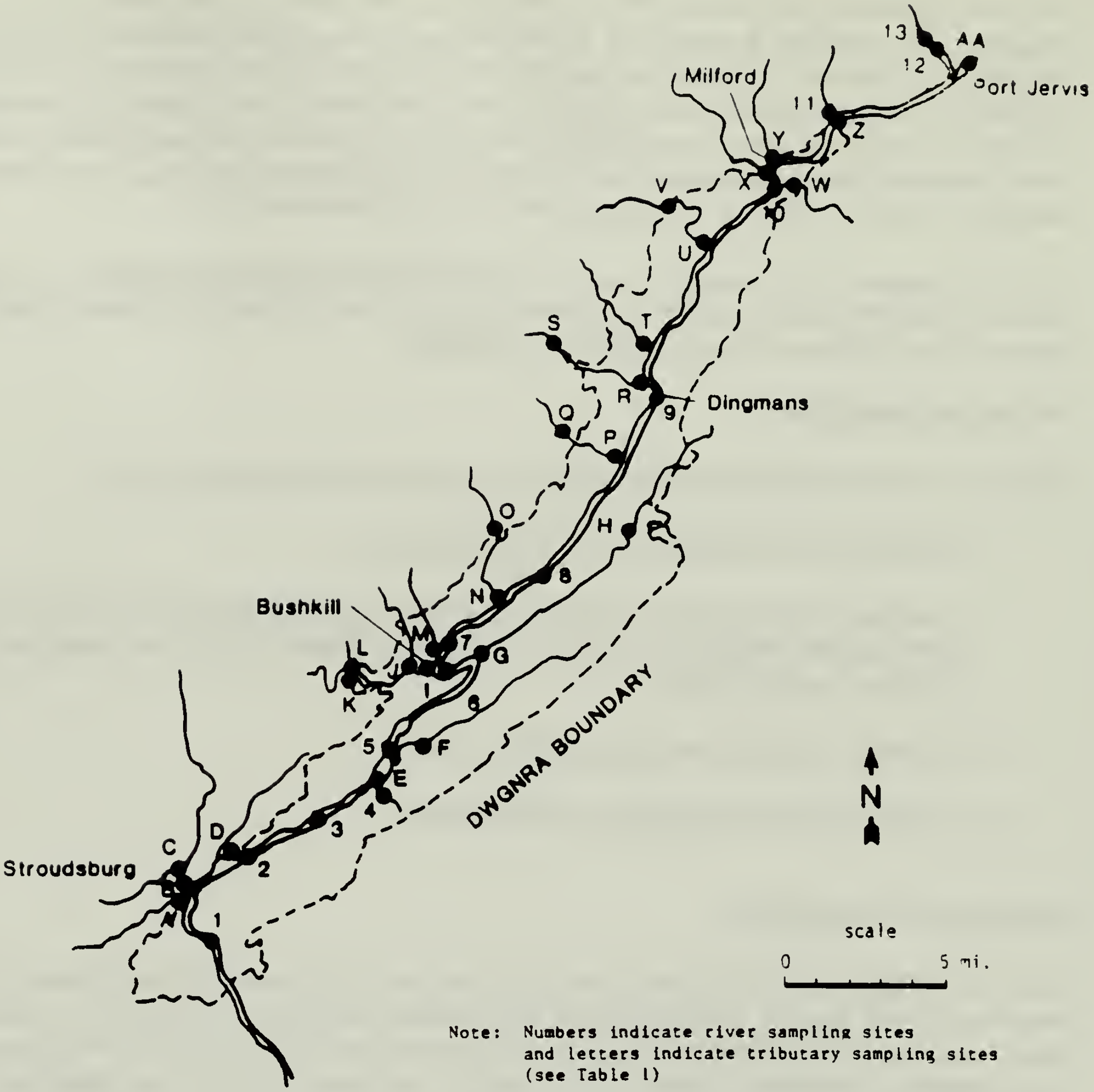
OVERVIEW OF PROGRAM

The 1991 DRBC/NPS Scenic Rivers Monitoring Program made over 600 station-visits to 77 sites in the scenic rivers region. During the sampling season, 33 tributaries (44 sites) and 28 Delaware River locations (33 sites) were sampled up to ten or more times each. These station-visits were part of the baseline monitoring effort. In this effort, data were collected for dissolved oxygen, air temperature, water temperature, Ph, conductivity, fecal coliform and other parameters. These data for river and tributary sites are presented in Appendices A and C, respectively. At selected sites, nutrient and biochemical oxygen demand samples were also taken for mathematical model development and for supplementing the existing data base for defining existing water quality. Figures 1 and 2 show the locations of these stations and Table 1 provides location descriptions.

Macroinvertebrates (aquatic insects) were collected at 12 sites: 1 each in the East and West Branches of the Delaware River near Hancock, N.Y.; 4 in the UDSRR, 5 in the DWGNRA, and 1 in the intervening reach of the Delaware River. Macroinvertebrates serve as a surrogate for toxic analyses and an indicator of long-term changes in water quality. Macroinvertebrate data will be presented in a separate report.

Figure 1

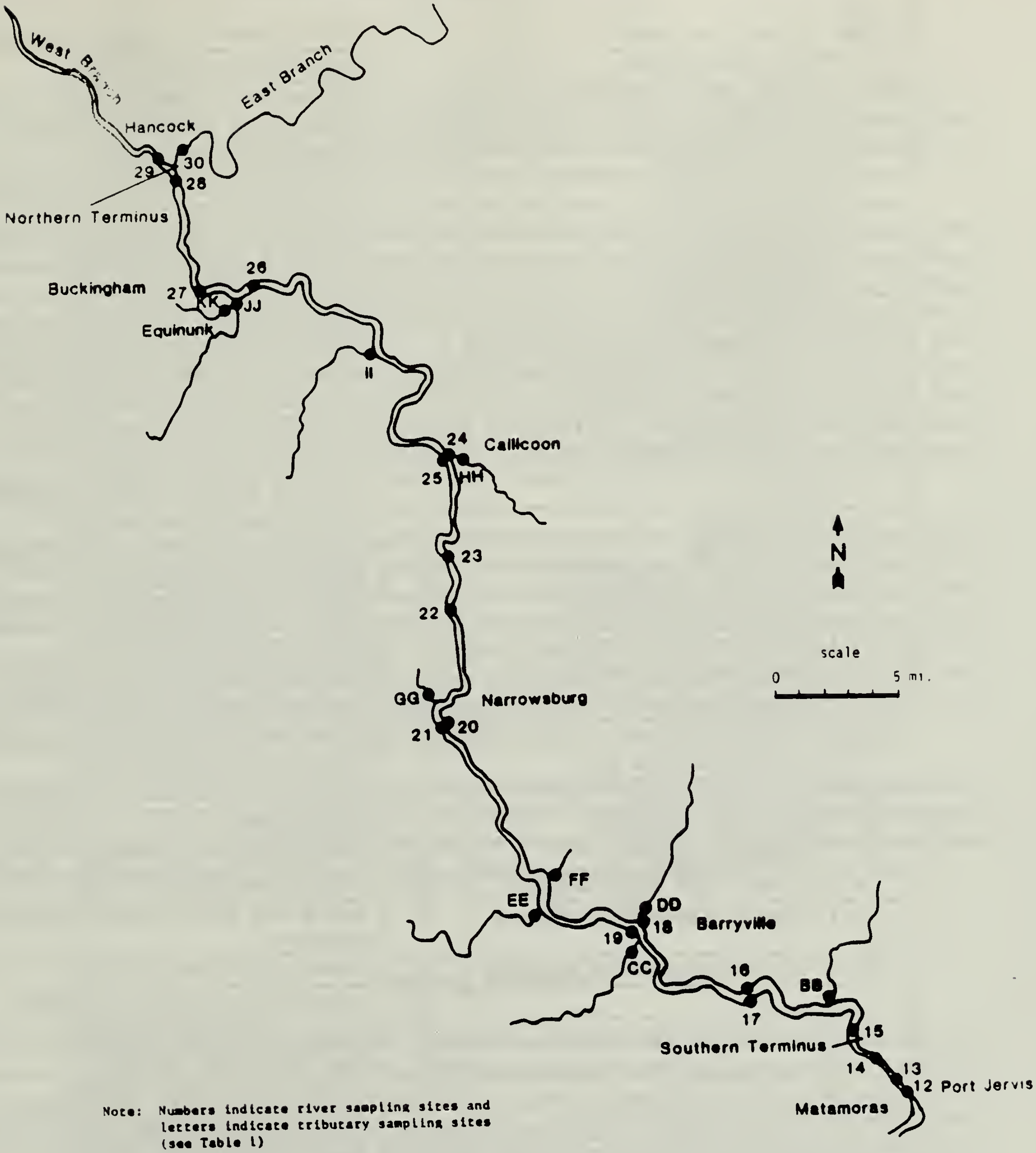
Delaware Water Gap National Recreation Area Sampling Stations



Note: Numbers indicate river sampling sites and letters indicate tributary sampling sites (see Table 1)

Figure 2

Upper Delaware Scenic and Recreational River Sampling Stations



Note: Numbers indicate river sampling sites and letters indicate tributary sampling sites (see Table 1)

Table 1
Map Key for Figures 1 and 2

Map Code	Delaware River Stations	Map Code	Tributary Stations
1	Kittatinny Access Area	A	Cherry Creek near Route 80 Bridge
2	Worthington Access Area	B	Brodhead Creek at Route 402 Bridge
3	Smithfield Access Area	C	Marshalls Creek at Minisink Hills Bridge
4	Poxono Access Area	D	Shawnee Creek at Resort Parking Lot
5	Depew Access Area	E	Pahaquarry Creek at Old Mine Road Bridge
6	Walpack Access Area	F	Van Campens Brook at Old Mine Road Bridge
7	Bushkill Access Area	G	Flat Brook at Old Mine Road Bridge
8	Eshback Access Area	H	Flat Brook at Walpack Center Bridge
9	Dingmans Access Area	I	Bushkill Creek at Route 209 Bridge
10	Milford Access Area	J	Little Bushkill near Bushkill Confluence
11	Northern DEWA (DWGNRA) Boundary	K	Bushkill Creek at DEWA (DWGNRA) Boundary
12	Port Jervis/Matamoras Bridge	L	Saw Creek near Bushkill Confluence
13	Port Jervis Beach	M	Denmark Creek at Route 209 Bridge
14	Matamoras Access Area	N	Toms Creek at Route 209 Bridge
15	Millrift	O	Toms Creek at DEWA (DWGNRA) Boundary
16	Pond Eddy, N.Y.	P	Hornbeck Creek at Route 209 Bridge
17	Pond Eddy, PA.	Q	Hornbeck Creek at DEWA (DWGNRA) Boundary
18	Shohola/Barryville Bridge, N.Y.	R	Dingmans Creek at Route 209 Bridge
19	Shohola/Barryville Bridge, PA.	S	Dingmans Creek at DEWA (DWGNRA) Boundary
20	Narrowsburg Access Area, PA.	T	Adams Creek at Route 209 Bridge
21	Narrowsburg Access Area, N.Y.	U	Raymondskill Creek at Route 209 Bridge
22	Skinners Falls Access Area	V	Raymondskill Creek at DEWA (DWGNRA) Boundary
23	Damascus Access Area	W	Shimers Brook at Route 521 Bridge
24	Callicoon Access Area, PA.	X	Sawkill Creek at Route 209 Bridge
25	Callicoon Access Area, N.Y.	Y	Vandermark Creek at Route 209 Bridge
26	Equinunk/Lordville Bridge	Z	Cummins Creek
27	Buckingham Access Area	AA	Neversink River at Route 6 Bridge
28	Just below E./W. Branch Confluence	BB	Mongaup River at Route 97 Bridge
29	E. Branch Delaware River at Hancock	CC	Shohola Creek at Railroad Bridge near Delaware River Confluence
30	W. Branch Delaware River at Hancock	DD	Halfway Brook at Route 97 Bridge
		EE	Lackawaxen River at Route 590 Bridge
		FF	York Lake Falls at Route 97 Bridge
		GG	Atco Creek at Route 652 Bridge
		HH	Callicoon Creek at Route 97 Bridge
		II	Little Equinunk Creek near Delaware River Confluence
		JJ	Equinunk Creek at Route 191 Bridge
		KK	Factory Creek at Route 191 Bridge

SPECIAL STUDIES

Special studies represent the research component of the program design and are conducted as follow up to the previous year's findings, to examine potential problems that become evident during current monitoring, or special subjects requiring investigation. During 1991, one special study was conducted: a sediment toxics survey of Beaver Brook, as discussed below.

A Time-of-Travel Study was conducted in 1991 for the Delaware River from Hancock, New York to the Delaware Water Gap. This study was conducted independently of the Scenic Rivers Monitoring Program. The Time of Travel Study was sponsored by the Commission, the National Park Service, the U.S. Geological Survey, and the Upper Delaware Council with assistance from a variety of agencies and citizen volunteers. In May and August, over 5000 pieces of data were collected which will be used to describe the hydrodynamics of the Delaware River under low flow and medium flow conditions, with and without reservoir releases. The information obtained from this study will be used to develop mathematical models of the river including both a toxic spill model and a water quality model. This study ranks among the largest of recorded time-of-travel studies.

The development of a water quality model is one element in the development of a water quality protection strategy that was initiated in 1987 by the Commission, the National Park Service (Delaware Water Gap National Recreation Area) and the National Park Service's Water Resources Division. The excellent water quality of the national scenic rivers is potentially threatened by the growth and development occurring in the adjacent drainage areas. The purpose of the planning activity is to develop a pollution prevention plan that preserves existing water quality in the two scenic river reaches. The proposed policies and regulations derived from this planning effort (see Appendix G) will be the subject of public hearings on May 5, 6, and 15, 1992.

Assuming the scenic rivers water quality protection strategy is adopted by the Commission, major modifications to the Commission/National Park Service monitoring program might be necessary. A study of potential new designs for the program is being initiated in early 1992. A program similar to the 1991 program, however, will likely be operated in 1992.

PROGRAM FINDINGS

1. **GENERAL FINDINGS:** The 1991 Commission/National Park Service monitoring program revealed no new water quality problems at the river and tributary sites sampled. In general, satisfactory water quality existed at nearly all monitoring sites. Dissolved oxygen values were high albeit with occasional supersaturated conditions; nutrients, fecal coliform, biochemical oxygen demand, and other values were usually low (except as noted in the Model Input Studies section); and conductivity, pH and water temperature were normal.

   As with past years, pollution in Callicoon Creek (Sullivan County, New York) was observed. This pollution appears to also influence water quality on the New York side of the Delaware River. The pending completion of the Callicoon (Town of Delaware) sewage conveyance and treatment plant system should result in significant improvements. Also observed in past years, the water quality of the various streams and river locations tended to reflect the degree of urbanization within their watersheds. Notable in this regard is Shawnee Creek (Monroe County, Pennsylvania).

Data collected for each Delaware River sampling site are presented in Appendix A. Appendix C presents data collected for each monitored tributary.

2. **WATER POLLUTION CONTROL SUCCESS STORIES:** The annual report for the 1984 monitoring program stated that "The most polluted tributary to the DWGNRA is Cherry Creek." Average fecal coliform values in the stream were 1679/100 milliliters with a geometric mean of 922/100 milliliter that far exceeded the adopted fecal coliform stream standard. Data in 1985 and 1986 showed geometric means greater than 6000/100 ml. with individual values as high as 66,000/100 ml. Cherry Creek's status as the most polluted stream in the scenic rivers area continued into subsequent years.

   Due to the efforts of Pennsylvania Department of Environmental Resources, the Borough of Delaware Water Gap, and others, a sewage treatment plant and connecting sewer lines were constructed for the borough. The plant began receiving wastewater in 1989.

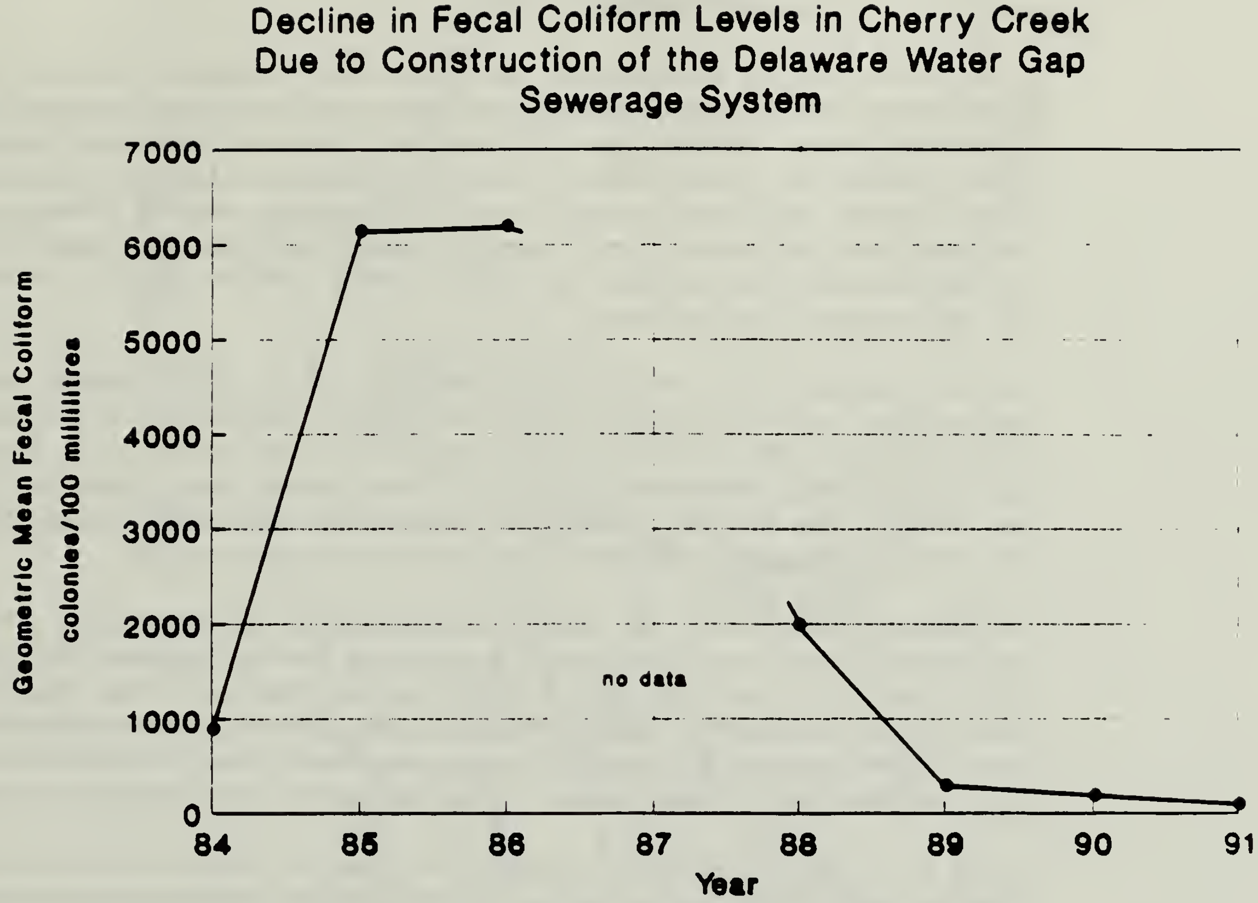
   Figure 3 shows that the completion of the Delaware Water Gap sewage treatment plant and the hookup of its entire service area has resulted in a major water quality improvement to Cherry Creek. In 1991, fecal coliform values in Cherry Creek met water quality standards for the second consecutive year with a geometric average of 120/100 milliliters. Today's fecal coliform levels in Cherry Creek are probably the lowest levels experienced in the last 100 years. Data for 1991 indicates that non-point sources are now the major influence on fecal coliform levels since the stream's bacterial levels are generally low until it rains (see Appendix F for precipitation data). The decrease in fecal coliform represents an overall decrease in organic loading to the stream.

   Possible improvement in the water quality of Brodhead Creek was also evident in 1991. Arithmetic average fecal coliform values observed in the 1984 to 1990 period generally ranged between 400 to greater than 500/100 ml. In 1991, however, the mean observed value was 110/100 ml. This apparent improvement in water quality is likely the result of improvements being made to the Stroudsburg and East Stroudsburg wastewater treatment plants.

   Data from 1992 should hopefully verify the 1991 results for Brodhead Creek and report the first indications of improvements to Callicoon Creek in New York State.

3. **BEAVER BROOK TOXICS SURVEY:** On October 24, 1991 Commission and National Park Service staff conducted a one-day survey of Beaver Brook which enters the UDSRR between Minisink Ford and Barryville, New York. The survey was conducted at the request of the Upper Delaware Council. Concern was expressed that toxics from the Barnes Landfill might have entered the stream from one or more runoff events that were reported to have occurred previously. The purpose of the survey was to determine if any residual

FIGURE 3


Decline in Fecal Coliform Levels in Cherry Creek
Due to Construction of the Delaware Water Gap
Sewerage System
Geometric Mean Fecal Coliform
colonies/100 millilitres
7000
6000
5000
4000
3000
2000
1000
0
84
85
86
87
88
89
90
91
Year
no data

toxics could be found in the stream at the location where runoff had been observed entering the stream.

Four sites in the downstream section of the creek were selected for sampling (see locations in Figure 4). Site 1 was site selected to define background conditions. Site 2 was the location of suspected inputs from runoff. Sites 3 and 4 were located downstream to determine the areal extent of impacts, if any.

It was decided to test Beaver Brook sediment for the presence of various toxicants, knowing that whatever may have entered the stream in the past would no longer be found in the water column. Sampling protocol, developed in previous Commission/National Park Service studies, was to sieve bottom sediment with specialized sampling equipment to collect particles 63 microns in size or less. This sediment sampling technique allows sediments from one location to be compared to another since the major variable (particle size distribution) is not a factor. In addition, small sediment particles are the most efficient collectors of contaminants.

Sediment samples were collected and analyzed for 13 heavy metals, petroleum hydrocarbons, and 38 volatile organic compounds. The results of the study are summarized in Figures 5, 6, and 7. Data from individual sites are located in Appendix E. The volatile organic compounds and six of the heavy metals were not detected. Arsenic and selenium were detected at most sites, but significant differences between sites were not evident. Both arsenic and selenium are naturally-occurring metals.

The findings of the study did show that small particle sediments from Site 2 had significantly higher levels of petroleum hydrocarbon (Petro), beryllium (Be), cadmium (Cd), copper (Cu), lead (Pb), and zinc (Zn) than the other three sites. Based on this finding, it is concluded that Site 2 is distinctly different from the other three sites. The toxics observed are used in a variety of man-made products, often in association with each other (eg. beryllium + copper; copper + zinc; cadmium + lead; petroleum + lead).

Beaver Brook, Site 2 thus might be subject to an external source(s) of these compounds. Although there was no observed overland runoff during the sampling at the Beaver Brook sites, circumstantial evidence (the lack of other likely sources) suggests that the source could be the reported runoff from the Barnes Landfill. This can not be verified without data from the runoff itself.

The aquatic and human health significance of the toxicants found in the sediments is not known, but probably minor. The fact that they are still found bound to the sediment particles suggests that they are not readily available to the aquatic food chain. Of more importance is the fact that the data from Site 2 show that Beaver Brook and possibly the UDSRR could be periodically subjected to runoff and/or localized groundwater flow carrying toxic substances.

Follow up monitoring actions should consist of the following: (a) conduct a follow-up macroinvertebrate survey to determine if any extant aquatic life impacts are evident; (b) establish a mechanism for sampling runoff events if they occur again; and (c) conduct a

FIGURE 4

LOCATION OF BEAVER BROOK SAMPLING SITES

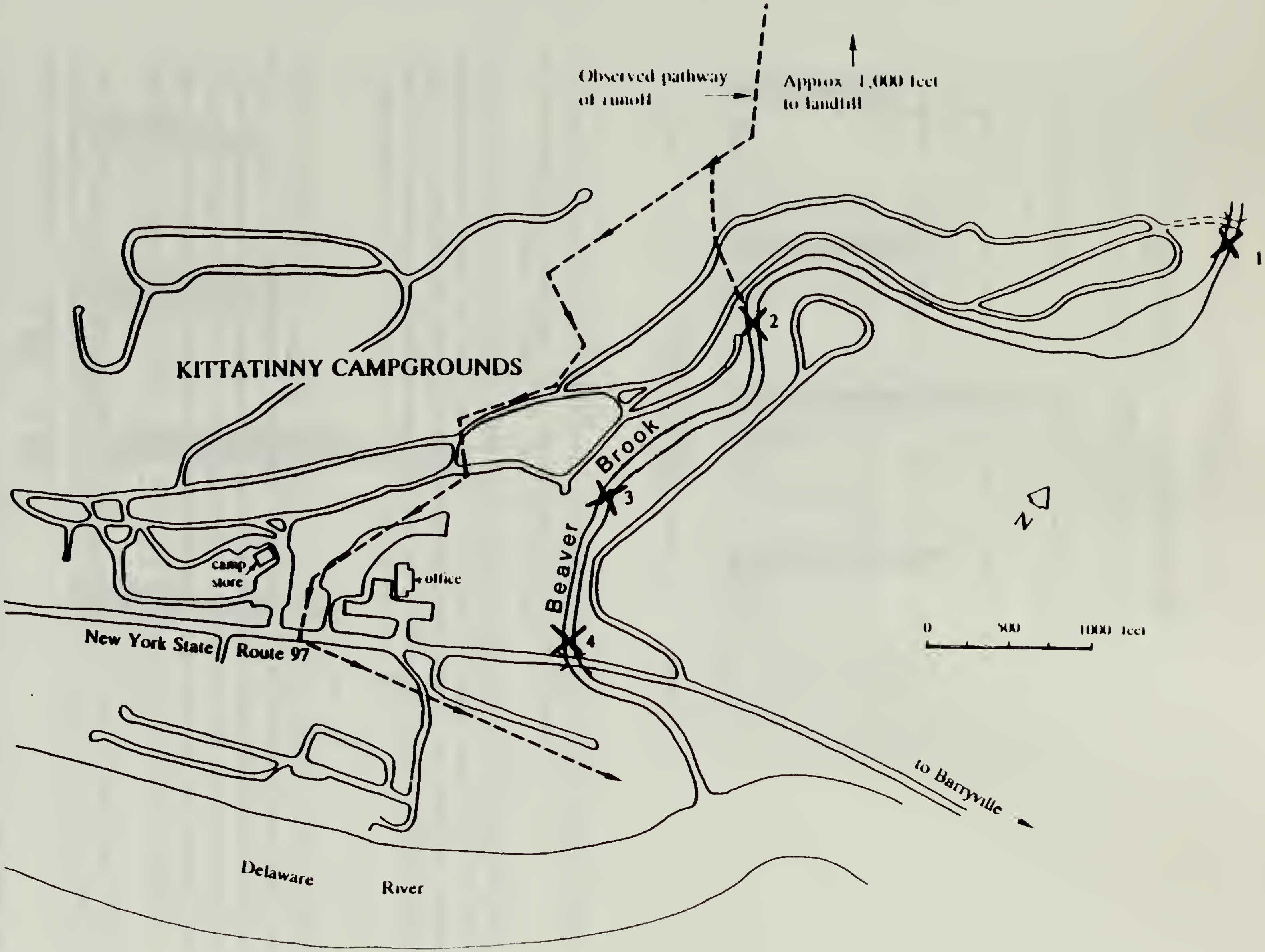


Figure 5

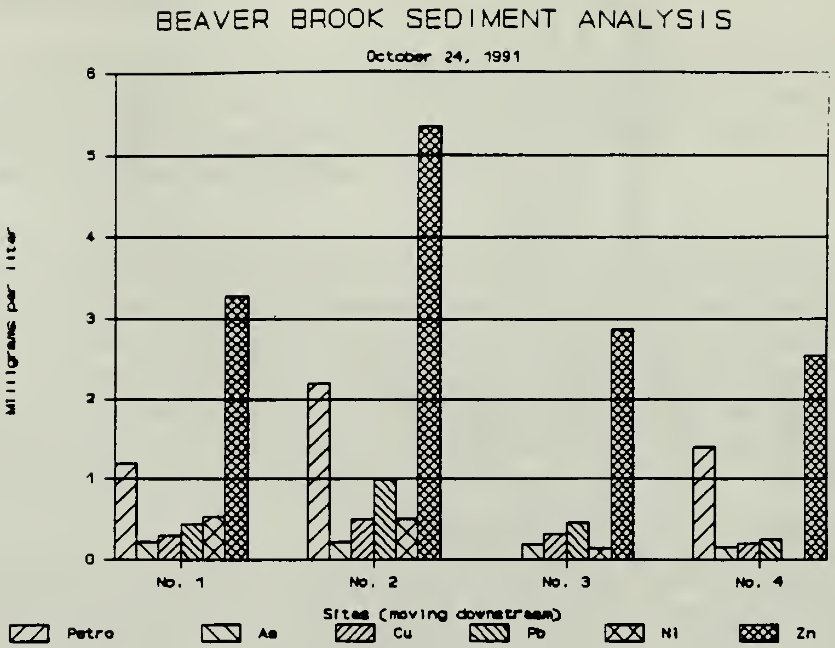


Figure 6

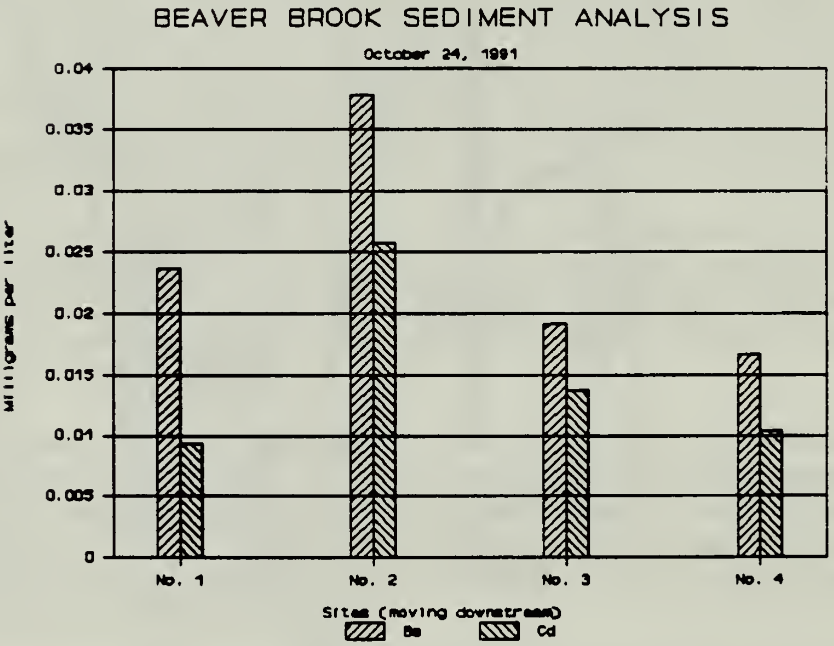
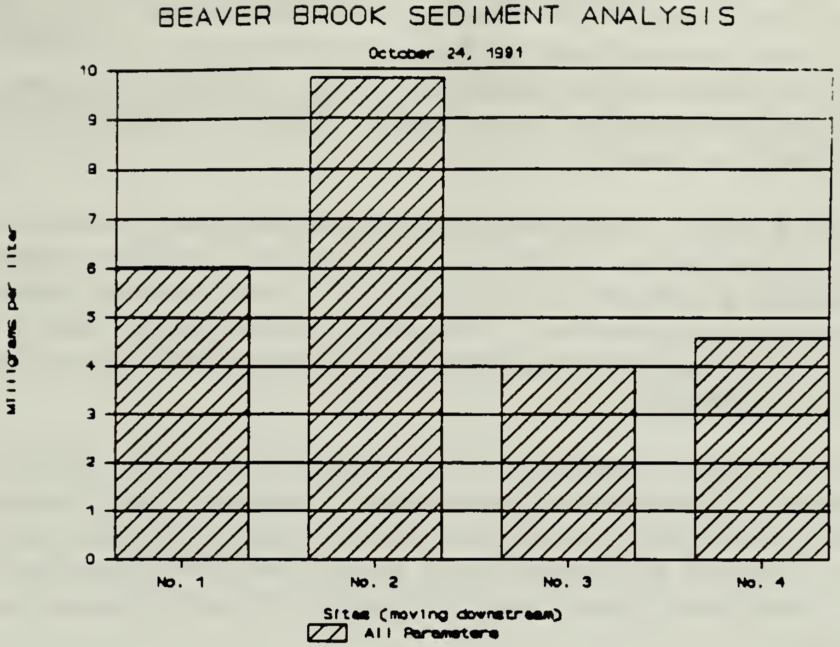


Figure 7



re-survey of the stream after a runoff event with macroinvertebrate samples collected along with sediment and water samples to determine related aquatic impacts, if any.

Design of follow-up studies should include establishing one or more background site(s) upstream of Site 1 since the 1991 data could be interpreted to show some level of external influence on that location as well. Data from the Beaver Brook survey have been sent to New York Department of Environmental Conservation officials involved with the Barnes Landfill closure.

4. **MODEL INPUT STUDIES:** 1991 represented the third year for collecting the specialized data needed for the development of a scenic rivers model. Dissolved orthophosphate, total orthophosphate, total phosphorus, nitrite plus nitrate, ammonia plus ammonium, and total Kjeldahl nitrogen were sampled at 33 tributary sites and 39 river sites from Hancock, New York to the downstream boundary of the DWGNRA. In addition to the nutrient data, biochemical oxygen demand (BOD) data were also obtained from the same locations.

   Data collected for model development including tributary flow rating curves, time of travel and dispersion, and other related data will be the subject of a series of reports leading to model development.

   Nutrient, BOD, and fecal coliform data collected in 1991, for modeling purposes, are presented in Appendices B and D for river and tributary sites, respectively. Mainstem (river) and tributary data were collected as 2-sample composites across the flowing section of the respective cross sections. Results of the 1991 modeling data are presented as arithmetic-average values in Figures 8 thru 14. Arithmetic averages were used to present relative differences between sites. An arithmetic average will either equal or be greater than a geometric average. Geometric averages better represent normal distributions for water quality data and were used as criteria for proposed water quality standards within the Upper Delaware Scenic and Recreational River and the Delaware Water Gap National Recreation Area (see Appendix E, pp. 11-12). A regression line was fit to each river data set. In most cases, the line can only be applied as a general guide for trends due to scattered data patterns.

Figure 8 shows a slight upward trend in total phosphorus from Hancock, N.Y. (river mile 332) to the Delaware Water Gap (river mile 211). All river averages were below 0.04 milligrams phosphorus per liter (mg P/l). Five tributaries showed elevated average phosphorus concentrations. In descending order: Cherry Creek (0.24 mg/l), Brodhead Creek (0.17 mg/l), Neversink River (0.11 mg/l), Bushkill Creek (0.09 mg/l), and Equinunk Creek (0.08 mg/l).

Figure 9 shows a downward trend in river total nitrogen, moving downstream. Total nitrogen is the combined concentration of ammonia (NH_3), ammonium (NH_4), nitrite (NO_2), nitrate (NO_3), and organic nitrogen. All river averages were below 0.90 mg N/l. Two tributaries had averages much greater than those of the river: Vandermark Creek (1.89 mg/l) and Cherry Creek (1.45 mg/l). All other tributaries had averages less than 1.00 mg/l.

Figures 10 and 11 show results of the 2 components of total nitrogen: Total Kjeldahl Nitrogen (TKN) which is the sum of NH3, NH4, and organic nitrogen; and nitrite plus nitrate (NO_2+NO_3) nitrogen. Downward trends were present for both from Hancock to the Delaware Water Gap. All river TKN averages were less than 0.45 mg/l and all tributary TKN averages were less than 0.60 mg/l. Two separate downward trends were noted for NO_2+NO_3 nitrogen, one from Hancock to Port Jervis, N.Y. (river mile 255), and a second from Port Jervis to the Delaware Water Gap. River averages were all less than 0.60 mg/l and most tributary averages were less than 0.70 mg/l, with 2 exceptions: Vandermark Creek (1.53 mg/l) and Cherry Creek (0.97 mg/l).

Very little river and tributary total nitrogen was attributable to NH_3+NH_4 nitrogen as shown in Figure 12. Average river NH_3+NH_4 concentrations were all less than 0.05 mg/l and all but 2 tributary averages were less than 0.03 mg/l. Cherry Creek averaged 0.23 mg/l and the Neversink River averaged 0.09 mg/l.

Figure 13 shows average 5-day Biochemical Oxygen Demand (BOD5) for the river and tributaries. These average river values show a great deal of scatter between 0.38 and 2.31 mg/l. The latter value represents a river site just upstream of the Flat Brook confluence (river mile 225.34). All tributary averages were less than 1.3 mg/l.

Figure 14 shows two distinct downward trends in arithmetic-average fecal coliform levels. These trends are from river averages extending from Hancock to Port Jervis and from Port Jervis to the Delaware Water Gap. All, but 1, river averages were less than 150 colonies/100 ml. The West Branch had an average of 394 colonies/100 ml. All, but 4, tributary averages were less than 100 colonies/100 ml. These tributaries were, in descending order, Callicoon Creek (1189 colonies/100 ml), Shawnee Creek (309 colonies/100 ml), Cherry Creek (274 colonies/100 ml), and Bushkill Creek (185 colonies/100 ml). The Callicoon Creek value was omitted from Figure 14 to maintain a readable plot.

These river and tributary values will be used to calibrate transformation and decay rates for these parameters in a water quality model that is currently being developed by the DRBC.

Figure 8

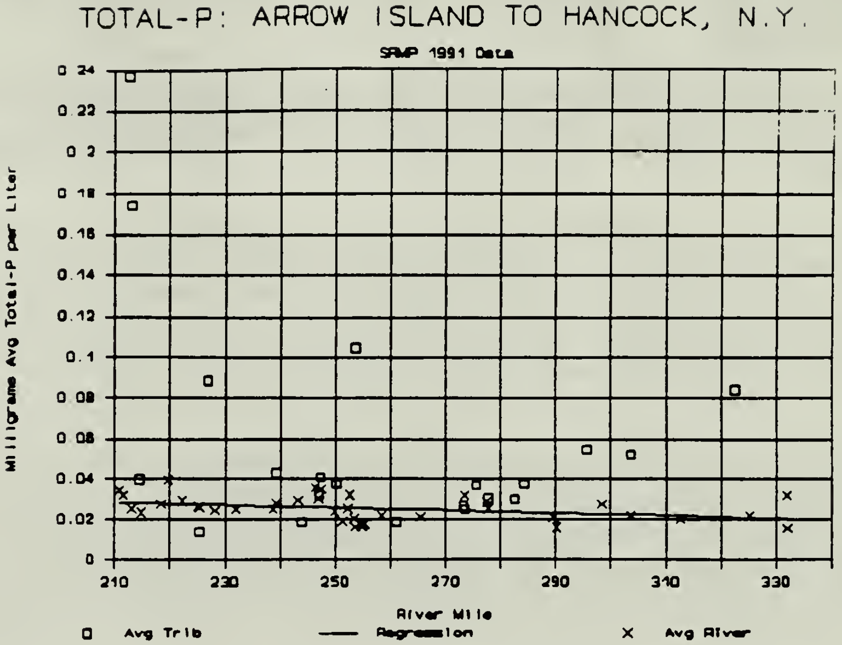


Figure 9

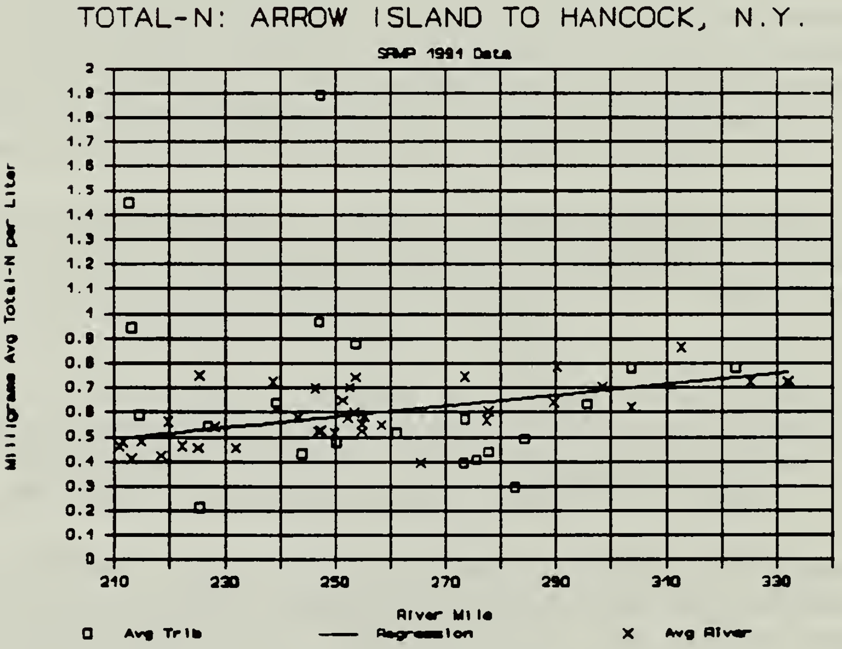


Figure 10

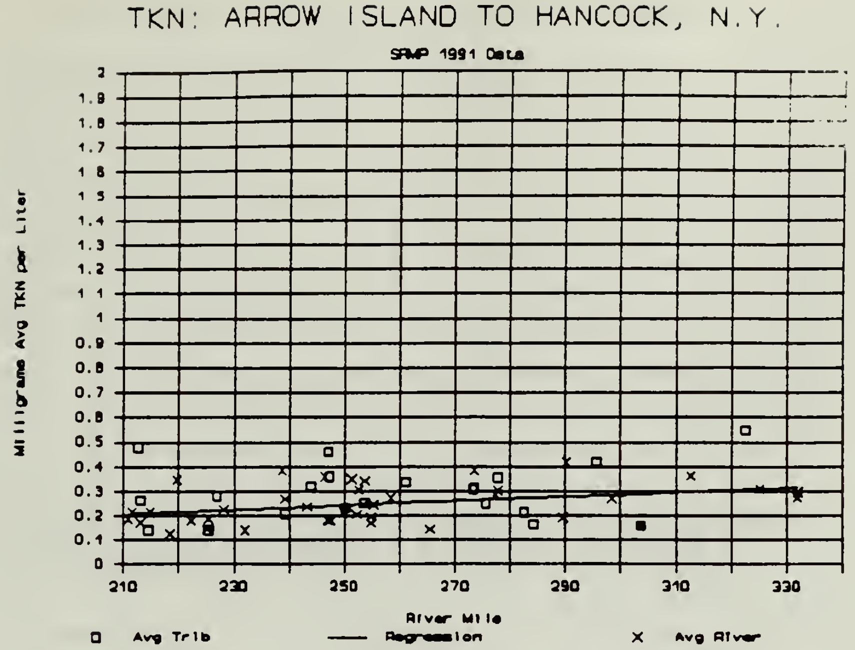


Figure 11

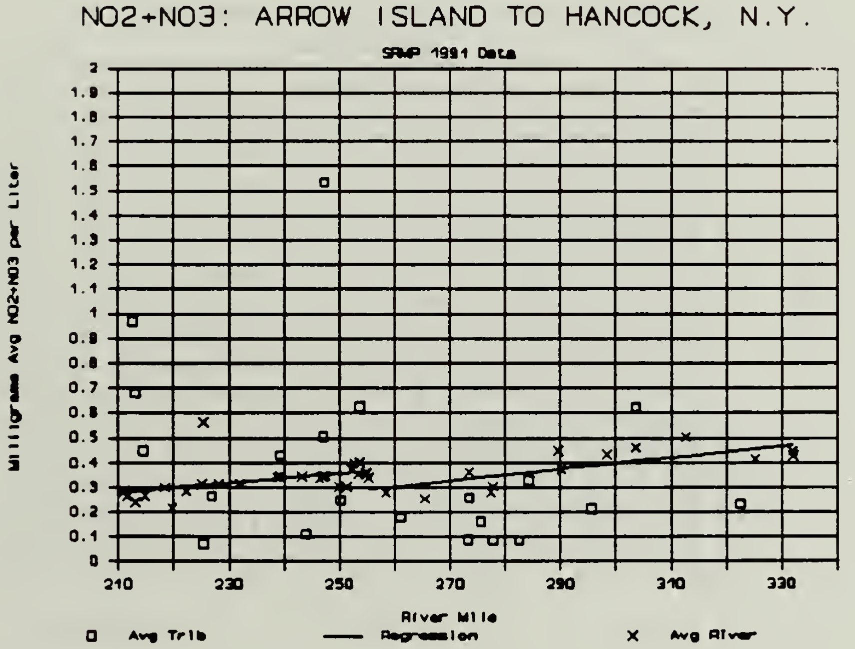


Figure 12

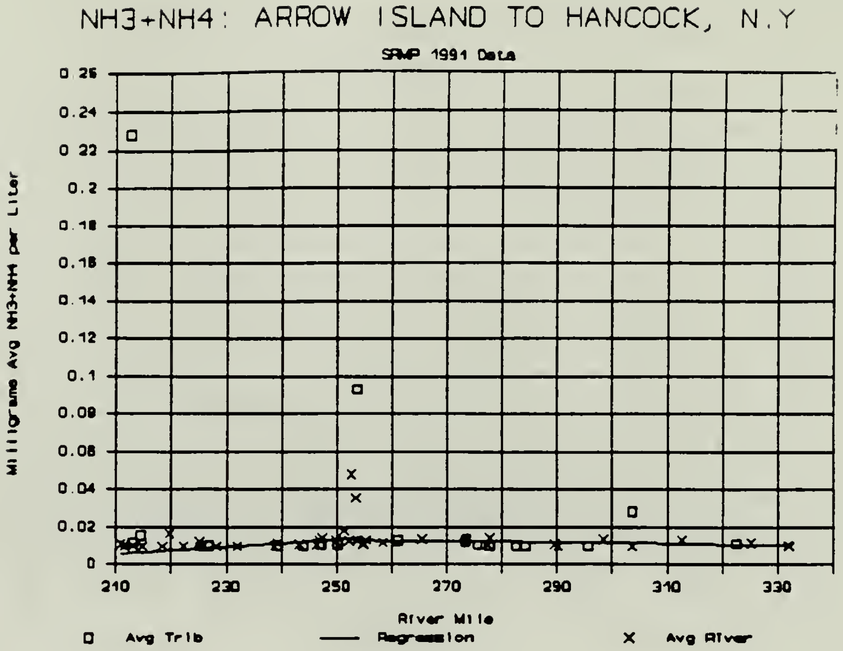


Figure 13

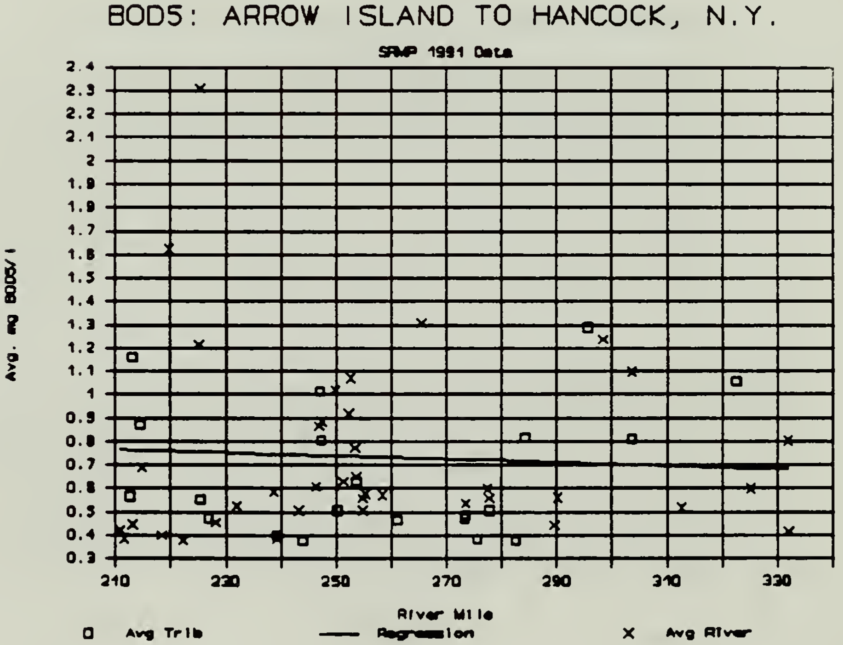
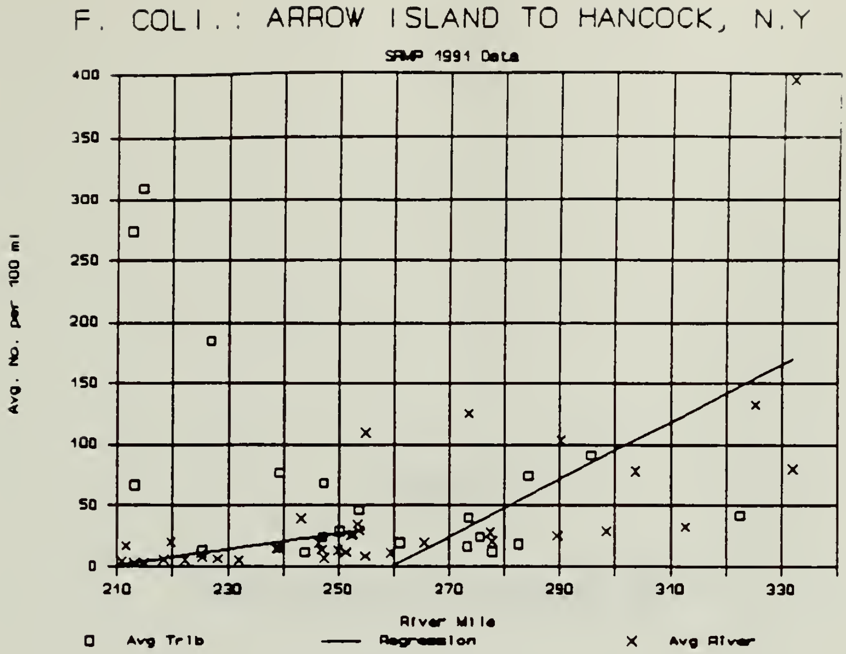


Figure 14


F. COLI.: ARROW ISLAND TO HANCOCK, N.Y
SRMP 1991 Data
Avg. No. per 100 ml
400
350
300
250
200
150
100
50
0
210
230
250
270
290
310
330
River Mile
Avg Trib
Regression
Avg River

APPENDIX A

ROUTINE RIVER MONITORING DATA

Key

K = Less Than
L = Greater Than
$ = Calculated

EAST BRANCH DELAWARE RIVER AT RT 97 BRIDGE, NY - RIVER MILE [illegible], 1.2
DRBC/NPS89

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 [illegible] /100ML	[illegible] /100ML
91/07/02	0815	21.0	19.0	9.8	104.3$	6.50	80	62	
91/07/08	1130	27.5	23.5	7.8	89.7$	7.50	100		
91/07/09	0840	22.0	20.0	9.1	98.9$	7.00	96	38	
91/07/24	0900	20.0	22.0	8.3	94.3$	7.00	90	66	
91/08/15	1230	21.0	23.3	8.2	94.3$	6.80	96	16	
91/08/21	0850	22.0	20.0	8.6	93.5$	7.00	100	104	
91/08/28	0815	22.0	20.0	8.3	90.2$	7.00	67	52	

WEST BRANCH DELAWARE RIVER AT RT 191 BRIDGE, NY - RIVER MILE 330.7, 1.3
DRBC/NPS90

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 [illegible] /100ML	[illegible] /100ML
91/07/02	0840	21.0	10.0	9.6	85.0$	6.50	50	160	
91/07/08	1315	28.5	12.8	11.7	110.4$	7.00	73		
91/07/09	0910	22.0	11.0	11.0	99.1$	7.00	60	26	
91/07/24	0915	20.0	16.0	9.4	94.0$	6.50	95	11	
91/08/15	1200	21.0	14.0	9.6	92.3$	6.80	77	54	
91/08/21	0920	22.0	17.0	8.2	84.5$	6.50	150	1400	
91/08/28	0840	22.0	17.0	8.5	87.6$	7.00	71	84	

DELAWARE RIVER AT BUCKINGHAM ACCESS, PA - RIVER MILE 325.1
DRBC/NPS24

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 [illegible] /100ML	[illegible] /100ML
91/06/12	0937	24.0	17.0	8.5	87.6$	6.30		122	
91/06/26	0845	21.0	15.0	[illegible]	90.2$	7.00	55	8	
91/07/02		21.0	15.0	[illegible]	93.1$	6.50	60	84	
91/07/09		22.0	17.0	10.1	104.1$	7.00	60	111	
91/07/11	1145	23.0	11.0	11.1	100.0$	7.00	74	50	
91/07/24	0940	20.0	20.0	8.8	[illegible]	7.00	75	41	
91/08/15	1125	22.0	17.6	8.8	[illegible]	6.80	81	130	
91/08/21	0940	22.0	17.5	9.0	[illegible]	6.50	70	831	
91/08/28	0910	27.0	20.0	8.7	91.4	7.00	65	40	

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM FCBR /100ML	31673 FEC STREP MF [illegible] /100ML
DELAWARE RIVER AT EQUINUNK/LORDVILLE BRIDGE, PA - RIVER MILE 321.6 DRBC/NPS23									
91/08/19	1145	20.0	17.4	8.7	89.7$	7.00	94	52	
DELAWARE RIVER AT CALLICOON ACCESS, NY - RIVER MILE 303.5 DRBC/NPS21									
91/06/12	1045	24.0	21.0	11.0	122.2$	7.50	100	400	
91/06/26	0940	25.0	19.0	12.6	134.0$	8.00	110	57	
91/07/02	1040	21.0	20.0	13.2	143.5$	7.00	115	52	
91/07/09	1100	24.0	22.0	12.9	146.6$	9.50	130	11	
91/07/24	1110	25.0	24.0	15.8	185.9$	9.50	130	8	
91/07/31	1105	21.0	21.8	10.4	118.2$	8.50	148	128	
91/08/21	1145	22.0	22.0	11.7	133.0$	7.00	120	384	
91/08/28	1035	28.0	23.0	11.1	127.6$	7.50	130	22	
DELAWARE RIVER AT CALLICOON ACCESS, PA - RIVER MILE 303.2 DRBC/NPS22									
91/06/12	1020	20.0	18.0	8.6	90.5$	7.00	70	76	
91/06/26	0955	25.0	20.0	9.3	101.1$	7.00	70	2	
91/07/02	1055	21.0	20.0	10.1	109.3$	6.50	120	11	
91/07/05	1215	16.0	14.5	9.6	92.3$	7.00	85		
91/07/09	1145	24.0	23.0	10.1	116.1$		75	140	
91/07/24	1130	25.0	23.0	9.6	110.3$	7.50	75	[illegible]	
91/07/31	1030	24.0	20.6	[illegible]	102.[illegible]$	7.50	70	24	
91/08/21	1215	22.0				7.50		500	
91/08/28	1050	28.0	25.0	8.0	107.1$	7.50	75	[illegible]	

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM FCBR /100ML	31673 FEC STREP MF /100ML

DELAWARE RIVER AT DAMASCUS ACCESS AREA, PA - RIVER MILE [illegible]
DRBC/NPS20

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM FCBR /100ML	31673 FEC STREP MF /100ML
91/06/12	1057	24.0	22.0	8.7	98.3$	7.00	70	51	
91/06/26	1015	27.0	22.0	9.1	103.4$	7.00	70	[illegible]	
91/07/02	1120	21.0	21.0	9.9	110.0$	6.50	70	10	
91/07/09	1150		25.0	9.6	116.7$	7.00	80	6	
91/07/24	1200	25.0	24.0	9.3	109.4$	7.50	80	11	
91/07/31	1145	21.0	21.6	9.2	104.5$	7.50	83	12	
91/08/21	1230	22.0	20.0	9.2	100.0$	6.50	70	111	
91/08/28	1120	28.0	25.0	8.4	100.0$	7.00	80	11	

DELAWARE RIVER AT SKINNERS FALLS ACCESS, NY - RIVER MILE 295.4
DRBC/NPS18

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM FCBR /100ML	31673 FEC STREP MF /100ML
91/06/12	1117	25.0	26.0	9.5	115.3$	7.50	75	66	
91/06/26	1030	27.0	21.0	10.1	112.2$	7.00	70	12	
91/07/15	1350	29.0	22.0	10.6	120.5$	8.00	80	4	
91/07/17	0820	23.0	17.0	9.2	94.8$	7.00	60	71	
91/08/01	0815	23.0	19.0	8.4	89.4$	7.00	70	61	

DELAWARE RIVER AT NARROWSBURG ACCESS, NY - RIVER MILE 290.0
DRBC/NPS16

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM FCBR /100ML	31673 FEC STREP MF /100ML
91/06/12	1140		26.0	7.1	86.6$	6.80	75	400	
91/06/26	1105	29.0	22.0	8.1	92.0$	6.50	70	4	
91/07/02	1215	28.0	21.0	7.8	86.7$	6.50	74	130	
91/07/09	1245	25.0	25.0	8.1	104.3$	6.50	80	36	
91/07/15	1146	28.5	19.9	8.8	95.7$	7.00	41	4	
91/07/24	1250	28.0	25.0	8.4	101.8$	8.00	80	11	
91/08/21	1345	26.0	25.0	8.7	101.6$	6.50	90	31	
91/08/28	1220	31.0	25.0	8.1	100.0$	6.50	90	[illegible]	

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                                 00020    00010     00300    00301     00400    00095     31616     31673
 DATE   TIME                      AIR     WATER      DO       DO        PH     CNDUCTVY  FEC COLI  FEC STREP
 FROM    OF                      TEMP     TEMP               SATUR              AT 25C   MFM-FCBR  MF KF AGAR
  TO    DAY                      CENT     CENT      MG/L    PERCENT     SU     MICROMHO   /100ML    /100ML
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DELAWARE RIVER AT NARROWSBURG ACCESS, PA - RIVER MILE 289.7
DRBC/NPS17

91/06/12 1157                    29.0               8.0                7.00                 68
91/06/26 1115                    31.0     22.0      7.8      88.6$     7.00       75         6
91/07/02 1235                    28.0     22.0      7.9      89.8$     6.50       70        12
91/07/03 0805                             19.0      7.8      84.0$     6.00       70        40
91/07/05 1530                    18.5     15.9      8.8      88.0$     6.80       81
91/07/09 1300                    30.0     25.0      8.7     103.6$     7.00       80        76
91/07/10 0840                    18.0     20.0      8.7      94.6$     7.00       75        12
91/07/15 1115                    24.0     19.0      8.6      91.5$     7.00       40         4
91/07/24 1315                    28.0     25.0      7.8      92.9$     7.00       80        12
91/07/25 0820                    20.0     23.5      7.3      83.9$     7.00       75        12
91/08/21 1340                    26.0     23.0      9.0     103.1$     7.00       80        32
91/08/28 1230                    31.0     25.0      8.3      98.8$     7.50       83         8


DELAWARE RIVER AT LACKAWAXEN ACCESS AREA, PA - RIVER MILE 277.7
DRBC/NPS15

91/07/03 1015                    23.0     20.0      8.1      88.0$     6.50       70         6
91/07/10 1110                    30.0     22.0      9.2     104.5$     8.00       75         2
91/07/25 1020                    20.0     24.0      8.6     101.2$     7.00       75         8
91/08/12 1419                    24.0     22.0      9.8     111.4$     8.00       96         4
91/08/22 0930                    23.0     21.0      8.2      91.1$     7.00       70       104
91/08/29 0905                    21.0     23.0      7.8      89.7$     7.00       95        22


DELAWARE RIVER AT BARRYVILLE/SHOHOLA BRIDGE, PA - RIVER MILE 273.5
DRBC/NPS14

91/06/20 1145                    30.0     26.5     11.3     137.9$     8.50       90        16
91/07/03 1100                    17.0     19.5      9.1      96.8$     7.50       83
91/07/17 1000                    28.0     23.0     10.2     117.9$     8.50       75         [illegible]
91/08/01 1010                    25.0     24.0     11.0     130.1$     8.50       85        11
91/08/12 1115                    25.1     20.9     10.0     111.1$     8.50       87         1
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DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM-FCBR /100ML	31673 FEC STREP KF AGAR /100ML
DELAWARE RIVER AT BARRYVILLE/SHOHOLA BRIDGE, NY RIVER MILE 273.5 DRBC/NPS13									
91/06/20	1115	30.0	26.0	12.6	153.7$	8.00	95	11	
91/07/03	1105	23.0	21.0	9.1	101.1$	6.50	80	496	
91/07/03	1309	17.5	19.6	9.0	97.8$	7.50	115		
91/07/10	1130	30.0	26.0	12.7	154.9$	9.50	110	24	
91/07/25	1215	24.0	23.5	14.5	166.7$	8.50	75	6	
91/08/22	1020	24.0	22.0	8.9	101.1$	7.00	70	83	
91/08/29	0950	28.0	24.5	11.1	130.6$	7.00	95	14	
DELAWARE RIVER AT POND EDDY, PA - RIVER MILE 265.8 DRBC/NPS115									
91/06/20	1240	30.0	25.0	9.2	109.5$	8.00	80	125	
91/07/17	1030	28.0	23.0	8.4	96.6$	7.50	65	13	
91/08/01	1035	25.0	23.0	8.0	92.0$	7.00	80	97	
91/08/22	1145	24.0	22.0	10.9	123.9$	8.00	80	8	
DELAWARE RIVER AT POND EDDY, NY - RIVER MILE 265.7 DRBC/NPS114									
91/06/20	1215	30.0	25.0			8.00	80	327	
91/07/03	1200	23.0	17.5	9.6	99.0$	6.50	70	18	
91/07/10	1240	30.0	24.0	12.4	145.3$	7.00	100	11	
91/07/25	1320	24.0	23.0	9.7	111.5$	6.50	80	26	
91/08/08	1308	28.0	23.0	[illegible]	105.7$	8.00	81	1	
91/08/22	1145	24.0	22.0	10.9	123.9$	8.00	80	8	
91/08/29	1130	30.0	27.0	11.8	145.7$	9.00	85	46	

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM FCBR /100ML	[illegible]
DELAWARE RIVER AT MILLRIFT BRIDGE, NY - RIVER MILE [illegible]									
DRBC/NPS112									
91/07/03	1245	23.0	21.0	6.3	92.8$	6.50	75	11	
91/07/10	1325	30.0	25.0	[illegible]	115.5$	8.50	80	11	
91/07/25	1350	24.0	23.0	8.7	100.0$	7.00	75	14	
91/08/08	1150	26.0	23.0	9.1	104.6$	7.50	76	11	
91/08/22	1240	24.0	26.0	9.6	117.1$	7.50	75	11	
91/08/29	1215	30.0	27.0	9.5	117.3$	8.00	90	14	
DELAWARE RIVER AT MATAMORAS ACCESS AREA, PA - RIVER MILE 256.2									
DRBC/NPS 12									
91/06/25	1130		23.6	9.7	111.1$	8.50	83		
91/06/26	1050	25.0	26.0	11.8	143.9$	9.00	85	14	
91/07/16	1230	29.0	26.6	11.0	135.8$	7.50	84	6	
91/07/18	1035		25.9	11.3	137.8$	8.50	82	20	
91/07/31	1010	25.0	23.0	9.7	111.5$	7.00	78	36	
91/09/05	1303		24.0	11.3	132.9$	9.00	80	16	
DELAWARE RIVER AT PORT JERVIS BEACH, NY - RIVER MILE 255.32									
DRBC/NPS110									
91/06/26	1035	24.0	23.0	9.1	104.6$	7.50	79	11	
91/07/01	0935					7.50		2	
91/07/09	1002	24.0	22.0			7.00		2	
91/07/16	1220	29.0	25.0	[illegible]	116.7$	8.00	82	11	[illegible]
91/07/18	1130	31.5	26.0	[illegible]	117.1$	7.50	84	42	
91/07/23	0935	30.0	26.0			7.30		2	
91/07/31	0855	24.0	22.0	6.9	78.4$	7.00	78	10	
91/08/13	1015	26.0	20.0			7.00		12	
91/08/22	0925	23.0	21.0			7.00		12	
91/08/29	1245	30.0	29.0	10.7	[illegible]	8.90	85	[illegible]	
91/09/05	1137	26.0	23.0	8.6	[illegible]	7.00	71	[illegible]	

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM-FCBR /100ML	31673 FECSTREP MF KFAGAR /100ML
DELAWARE RIVER AT PORT JERVIS/MATAMORAS BRIDGE, NY - RIVER MILE 254.8									
DRBC/NPS1111									
91/06/07	0935	15.0	20.0			7.00		34	
91/06/10	0930		22.0	8.6	97.7$	7.00	78	44	
91/06/19	0910	18.0	22.0	7.5	84.2$	7.00	76	608	
91/06/26	0945	21.0	22.0	9.1	103.4$	7.00	80	103	
91/07/01	0955					8.00		2	
91/07/09	1020	25.0	22.0			8.00		124	
91/07/16	1200	27.0	24.0	10.4	122.4$	8.00	84	120	
91/07/23	1005	29.0	26.0			8.80		10	
91/07/31	0920	23.0	22.0	8.3	94.3$	7.00	79	422	
91/08/13	1040	27.0	21.0			7.80		10	
91/08/22	0945	23.0	21.0			8.50		100	
91/09/05	1203	26.0	23.0	10.7	117.2$		78	130	
DELAWARE RIVER UPSTREAM OF NEVERSINK RIVER (RT. 84), PA - RIVER MILE 253.6									
DRBC/NPS109									
91/07/01	1020					7.50		28	
91/07/09	1040	26.0	22.0			7.50		24	
91/07/16	1119	23.0	22.0	8.9	101.1$	7.50	41	14	
91/07/23	1025	30.0	26.0			7.50		22	
91/07/31	0948	23.0	22.0	8.4	95.5$	7.00	76	30	
91/08/13	1105	28.0	21.0			7.80		22	
91/08/22	1008	24.0	21.0			7.00		52	
91/09/05	1240	26.0	21.5	[illegible]	105.6$	8.00	84	17	

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                              00020     00010     00300     00301     00400     00095     31616     31679
DATE   TIME                   AIR       WATER     DO        DO        PH        CNDUCTVY  FEC COLI  FECSTREP
FROM    OF                    TEMP      TEMP                SATUR               AT 25C    MFM-FCBR  MF M-ENTERO
 TO    DAY                    CENT      CENT      MG/L      PERCENT   SU        MICROMHO  /100ML    /100ML
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DELAWARE RIVER AT NORTHERN DEWA BOUNDARY, PA - RIVER MILE [illegible]
DRBC/NPS1081

91/06/07 1035                 20.0      21.0      9.2       102.4$    7.00      75        11
91/06/10 0955                 25.0      23.0      8.4        96.6$    7.50      80        42
91/06/19 1005                 18.0      21.0      8.1        90.0$    7.00      80        84
91/06/26 1115                 25.0      24.0      8.9       104.7$    8.00      85         9
91/07/01 1210                                                         8.00                13
91/07/09 1220                 29.0      23.0                          8.00                10
91/07/16 1330                 29.0      25.0      9.6       114.3$    8.00      83         1
91/07/23 1210                 33.0      27.0                          8.50                12
91/07/31 1147                 27.0      24.0      9.6       112.9$    9.00      80        36
91/08/13 1230                 29.0      22.0                          8.00                19
91/08/22 1131                 26.0      22.0                          7.50                15
91/09/05 1324                 27.0      23.0      10.4      119.5$    9.00      82         6


DELAWARE RIVER NORTH OF VANDERMARK CREEK, PA - RIVER MILE 247.4
DRBC/NPS107

91/07/01 1230                                                         9.00                 6
91/07/09 1315                 29.0      23.0                          8.00                11
91/07/23 1345                 33.0      27.0                          9.00                 5
91/08/13 1330                 29.0      22.0                          8.00                17
91/08/22 1253                 28.0      22.0                          7.50                 8
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DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM-FCBR /100ML	31673 FECSTREP MFM-ENT /100ML
DELAWARE RIVER AT MILFORD BEACH ACCESS AREA, PA - RIVER MILE 246.3 DRBC/NPS461									
91/06/06	1430	22.0	23.0	9.3	106.3$	7.50	81	13	
91/06/10	1110	24.0	23.0	8.8	101.2$	7.50	86	11	
91/06/19	1135	19.0	21.0	8.2	91.1$	7.00	82	71	
91/06/25	1345	34.0	25.0	9.1	108.3$	8.00	85		
91/06/26	1205	26.0	24.0	9.1	107.1$	8.00	90	5	
91/07/01	1300					7.50		10	
91/07/02	0920					7.00			
91/07/09	1340	32.0	23.0			8.00		2	
91/07/10	0950	23.0	23.0	7.4	85.1$	7.00	81	19	
91/07/16	1425	30.0	24.0	9.2	108.2$	7.50	87	[illegible]	
91/07/18	1310		24.0	8.7	102.4$	7.50	90	[illegible]	
91/07/23	1420	32.0	27.0			8.00		10	
91/07/24	0932	27.0	25.0			7.00		11	
91/07/31	1106	28.0	23.0	8.0	92.0$	7.00	83	33	
91/08/13	1400	30.0	22.0			7.50		21	
91/08/14	0910	24.0	22.0			7.00		67	
91/08/21	0912	24.0	21.0			7.00		18	
91/08/22	1322	28.0	21.0			7.00		17	
91/09/05	1413	28.0	22.0	8.6	97.7$	7.50	79	150	
DELAWARE RIVER AT DINGMANS ACCESS, PA - RIVER MILE 238.7 DRBC/NPS9									
91/06/10	1210	30.0	24.0	7.8	91.8$	7.00	85	10	
91/06/19	1215	21.0	22.0	7.6	86.4$	7.00	80	50	
91/06/25	1130		24.5	[illegible]	104.7$	7.50	89		
91/07/02	1025					7.00		4	
91/07/10	1120	25.0	24.0	8.0	91.1$	7.50	88	[illegible]	
91/07/17	1155	32.0	25.0	7.9	91.0$	7.50	86	4	
91/07/24	1038	28.0	24.0			7.00		47	
91/08/14	1020	28.0	22.0			7.00		13	
91/08/21	1015	21.0	[illegible]			7.00		13	

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                                     00020     00010     00300     00301     00400     00095     31616     31673
 DATE   TIME                         AIR       WATER     DO        DO        PH        CNDUCTVY  FEC COLI  FEC STREP
 FROM    OF                          TEMP      TEMP                SATUR               AT 25C    MEM FILTER [illegible]
  TO    DAY                          CENT      CENT      MG/L      PERCENT   SU        MICROMHO  /100ML    /100ML
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DELAWARE RIVER AT ESHBACK ACCESS AREA, PA - RIVER MILE [illegible]
DRBC/NPS58

91/06/13 1225                        22.0      22.0       9.5      108.0$    7.50        89         8
91/06/19 1219                        20.0      22.0       8.2       93.2$    7.00       102       104
91/06/26 1257                        28.0      26.0      10.3      125.6$    8.00       102        11
91/07/02 1120                                                                7.50                   1
91/07/10 1240                        27.0      25.0       8.0       95.2$    8.00        82         1
91/07/16 1325                        32.0      25.0       9.6      114.3$    9.00        90         4
91/07/24 1134                        28.0      25.0                          7.50                  15
91/07/30 1330                        26.0      25.0      10.0      119.0$    8.00        93         2
91/08/14 1140                        29.0      23.0                          7.00                   3
91/08/21 1118                        26.0      22.0                          7.00                   9


DELAWARE RIVER AT BUSHKILL ACCESS AREA, PA - RIVER MILE [illegible]
DRBC/NPS57

91/06/13 1200                        19.0      22.0       8.9      101.1$    7.00        86        21
91/06/19 1200                        18.5      23.0       7.4       85.1$    7.00        93        90
91/06/25 1105                        30.0      24.0       7.8       91.8$    7.50        85
91/06/26 1240                        28.0      24.0       8.4       98.8$    7.50        91        11
91/07/02 1140                                                                7.00                  10
91/07/10 1300                        27.0      25.0       8.5      101.2$    7.50        80        11
91/07/16 1305                        33.0      24.0       9.3      109.4$    8.00        85         3
91/07/24 1158                        29.0      25.0                          7.00                   6
91/07/30 1310                        26.0      23.8       8.1       96.5$    7.00        86  [illegible]
91/08/14 1212                        29.0      23.0                          7.00            [illegible]
91/08/21 1141                        29.0      22.0                          7.00                  11


DELAWARE RIVER AT WALPACK BEND, PA - RIVER MILE [illegible]
DRBC/NPS102

91/07/10 1330                        24.0      25.0  [illegible]   10[illegible].1$  7.50   91
91/07/24 1218                        32.0      25.0                          7.00            [illegible]
91/08/14 1[illegible]                3[illegible].0  [illegible]             7.00            [illegible]
91/08/21 1[illegible]                30.0      2[illegible].0                7.00
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                                   00020     00010     00300     00301     00400     00095     31616     31679
 DATE   TIME                        AIR      WATER      DO        DO        PH      CNDUCTVY  FEC COLI  FECSTREP
 FROM    OF                         TEMP      TEMP               SATUR              AT 25C   MFM-FCBR  MF M-ENT
  TO    DAY                         CENT      CENT     MG/L     PERCENT     SU     MICROMHO   /100ML    /100ML
======================================================================================================================

DELAWARE RIVER AT DEPEW ACCESS AREA, NJ - RIVER MILE 221.2
DRBC/NPS5

91/06/28 1415                       34.0      26.0      9.2     112.4$     8.00       93
91/07/17 1037                       27.0      24.0      8.2      96.5$     8.00       88         6
91/08/01 1135                       27.5      25.3      8.0      95.2$     7.50       93         2


DELAWARE RIVER AT POXONO ACCESS AREA, NJ - RIVER MILE 219.4
DRBC/NPS4

91/06/20 1240                       29.0      24.1      8.3      97.6$     7.30       93         1
91/06/28 1438                       32.0      27.0      9.1     112.3$     8.00       93
91/07/02 1250                                                              7.00                  5
91/07/10 1420                       29.0      25.0      8.8     104.8$     8.50       95         1
91/07/17 1056                       28.0      26.0      8.6     104.9$     8.50       92         4
91/07/24 1320                       33.0      27.0                         7.00                 53
91/08/01 1105                                 24.6      7.8      92.9$     7.50       94        20
91/08/14 1330                       28.0      24.0                         8.00                  1
91/08/21 1250                       30.0      24.0                         7.00                 37


DELAWARE RIVER AT SMITHFIELD ACCESS, PA - RIVER MILE 218.3
DRBC/NPS3

91/06/13 1000                       18.0      22.0      8.4      95.5$     7.00       92        93
91/06/19 0958                       17.0      24.0      7.0      82.1$     7.00       99       413
91/06/25 1000                       21.5      23.2      8.8     101.3$     7.50       94
91/06/26 1115                       24.5      24.0      9.1     107.1$     8.00       96  [illegible]
91/07/02 1310                                                              7.00                  2
91/07/10 1440                       29.0      24.0      8.9     104.7$     8.00                  1
91/07/16 1010                       25.0      23.0      8.5      97.7$     8.00       90        11
91/07/24 1336                       34.0      26.0                         7.00            [illegible]
91/07/30 1116                       23.9      24.0      9.1     107.1$     7.50       97         1
91/08/14 1343                       31.0      22.0                         7.00            [illegible]
91/08/21 1300                       29.0      27.0                         7.00            [illegible]
```

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MEM FILTR /100ML	31673 FEC STREP M ENTERO /100ML
DELAWARE RIVER AT WORTHINGTON ACCESS AREA, NJ - RIVER MILE 214.8									
DRBC/NP52									
91/06/20	1130	30.0	23.4	8.3	95.4$	7.30	94	24	
91/06/27	1130	26.5	25.0	9.1	108.[illegible]$	8.00	93	8	
91/07/17	1115	29.0	25.0	9.2	97.6$	9.00	89	3	
91/08/01	1045	24.0	24.9	8.6	102.4$	8.00	94	4	
DELAWARE RIVER AT KITTATINNY ACCESS AREA, NJ - RIVER MILE 211.5									
DRBC/NP51									
91/06/20	1050	30.0	23.5	7.4	85.1$	7.50	97	11	
91/06/27	1110	26.0	25.0	7.4	88.1$	7.00	100	23	
91/07/02	1355					7.50		26	
91/07/10	1550	30.0	25.0	9.8	116.7$	9.00	100	1K	
91/07/17	1136	32.0	25.0	8.0	95.2$	8.00	88	11	104
91/07/24	1440	38.0	27.0			8.00		9	
91/08/01	1018	24.0	24.6	7.3	86.9$	7.00	101	28	
91/08/14	1444	30.0	23.0			7.50		1K	
91/08/21	1415	30.0	23.0			7.00		1K	
91/08/22	0845	23.0	20.0	8.9	96.7$	7.00	85	8	
DELAWARE RIVER JUST UPSTREAM OF ARROW ISLAND, PA - RIVER MILE 211.1									
DRBC/NP501									
91/07/02	1400							1.	
91/07/10	1600	29.0	24.0	[illegible]	105.7$	8.00	98	11	
91/07/24	1448	33.0	25.0			7.00		4	
91/08/14	1450	30.0	24.0			7.00		1	
91/08/21	1420	29.0	23.0			7.00		8	

APPENDIX B

RIVER MODELING DATA

NUTRIENTS AS N AND P (in mg/l)
** 2-SAMPLE COMPOSITES **

Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
E. Branch Del R. @ Route 97 Bridge	7/02/91	0.110	<0.010	0.774	0.020	<0.010	<0.010
R.M. 332.00	7/09/91	0.310	<0.010	0.747	0.023	<0.010	<0.010
	7/24/91	0.150	<0.010	0.176	0.014	<0.010	<0.010
	8/21/91	0.640	<0.010	0.175	0.013	<0.010	<0.010
	8/28/91	0.280	0.010	0.266	<0.010	<0.010	<0.010
W. Branch Del R. @ Route 191 Bridge	7/02/91	0.240	<0.010	0.108	0.015	<0.010	<0.010
R.M. 331.90	7/09/91	<0.100	<0.010	0.195	0.018	<0.010	<0.010
	7/24/91	0.290	<0.010	0.670	0.023	<0.010	<0.010
	8/21/91	0.460	<0.010	0.672	0.050	0.012	0.012
	8/28/91	0.280	0.012	0.586	0.055	0.013	0.013
Del R. @ Buckingham Access	7/02/91	0.110	<0.010	0.123	0.016	<0.010	<0.010
R.M. 325.14	7/09/91	0.240	0.016	0.631	0.026	<0.010	<0.010
	7/24/91	0.320	0.011	0.395	0.019	<0.010	<0.010
	8/21/91	0.780	<0.010	0.442	0.021	<0.010	<0.010
	8/28/91	<0.100	<0.010	0.483	0.029	<0.010	<0.010
Del R. @ Kellam's Bridge	7/02/91	0.120	<0.010	0.560	0.020	<0.010	<0.010
R.M. 312.59	7/09/91	0.100	<0.010	0.570	0.018	<0.010	<0.010
	7/24/91	0.700	0.026	0.477	0.017	<0.010	<0.010
	8/21/91	0.640	<0.010	0.475	0.021	<0.010	<0.010
	8/28/91	0.250	<0.010	0.427	0.025	<0.010	<0.010
Del R. @ Callicoon Access	7/02/91	<0.100	<0.010	0.528	0.024	<0.010	<0.010
R.M. 303.61	7/09/91	0.120	<0.010	0.503	0.019	<0.010	<0.010
(Avg.: Callicoon, N.Y. & PA)	7/24/91	<0.100	<0.010	0.441	0.014	<0.010	<0.010
	8/21/91	0.130	<0.010	0.457	0.031	<0.010	<0.010
	8/28/91	0.340	0.010	0.382	0.023	<0.010	<0.010
Del R. @ Damascus, PA	7/02/91	<0.100	<0.010	0.492	0.046	<0.010	<0.010
R.M. 298.40	7/09/91	0.160	0.016	0.446	0.019	<0.010	<0.010
	7/24/91	0.760	0.021	0.396	0.022	<0.010	<0.010
	8/21/91	0.100	<0.010	0.457	0.026	<0.010	<0.010
	8/28/91	0.240	<0.010	0.374	0.025	<0.010	<0.010

NUTRIENTS AS N AND P (in mg/l) ** 2-SAMPLE COMPOSITES **							
Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
Del R. @ Narrowsburg, N.Y.	7/02/91	<0.100	<0.010	0.226	0.020	<0.010	<0.010
R.M. 290.10	7/09/91	<0.100	<0.010	0.478	0.017	<0.010	<0.010
	7/24/91	1.200	<0.010	0.369	0.013	<0.010	<0.010
	8/21/91	0.150	<0.010	0.475	0.012	<0.010	<0.010
	8/28/91	0.530	<0.010	0.312	0.019	<0.010	<0.010
Del R. @ Narrowsburg, PA	7/02/91	<0.100	<0.010	0.471	0.019	<0.010	<0.010
R.M. 289.60	7/03/91	<0.100	0.012	0.516	0.036	<0.010	<0.010
	7/09/91	<0.100	<0.010	0.502	0.020	<0.010	<0.010
	7/10/91	0.260	0.013	0.463	0.034	<0.010	<0.010
	7/24/91	<0.100	0.010	0.396	0.012	<0.010	<0.010
	7/25/91	<0.100	<0.010	0.424	0.014	<0.010	<0.010
	8/21/91	0.270	<0.010	0.478	0.012	<0.010	<0.010
	8/28/91	0.520	<0.010	0.326	0.022	<0.010	<0.010
Del R. Just US of Lackawaxen R.	7/03/91	0.180	<0.010	0.409	0.025	<0.010	<0.010
R.M. 277.74	7/10/91	0.210	<0.010	0.072	0.037	0.016	0.016
	7/25/91	0.510	<0.010	0.316	0.022	<0.010	<0.010
	8/22/91	0.320	0.031	0.406	0.026	<0.010	<0.010
	8/29/91	0.290	<0.010	0.312	0.018	<0.010	<0.010
Del R. @ Lackawaxen/Minisink Ford Bridge	7/03/91	<0.100	<0.010	0.276	0.024	<0.010	<0.010
(Just DS of Lackawaxen R. confluence)	7/10/91	<0.100	<0.010	0.233	0.051	0.013	<0.010
R.M. 277.40	7/25/91	0.490	<0.010	0.322	0.014	<0.010	<0.010
	8/22/91	0.350	<0.010	0.392	0.026	<0.010	<0.010
	8/29/91	0.400	0.012	0.181	0.029	<0.010	<0.010
Del R. @ Shohola/Barryville Bridge	7/03/91	<0.100	<0.010	0.452	0.024	<0.010	<0.010
R.M. 273.50	7/10/91	0.520	<0.010	0.402	0.079	<0.010	<0.010
	7/25/91	0.680	<0.010	0.272	0.018	<0.010	<0.010
	8/22/91	0.390	0.023	0.421	0.021	<0.010	<0.010
	8/29/91	0.230	<0.010	0.254	0.019	<0.010	<0.010
Del R. @ Pond Eddy Bridge	7/03/91	<0.100	<0.010	0.131	0.026	<0.010	<0.010
R.M. 265.50	7/10/91	<0.100	0.012	0.385	0.026	<0.010	<0.010
	7/25/91	0.150	0.013	0.193	0.019	<0.010	<0.010
	8/22/91	0.220	0.023	0.337	0.017	0.014	0.013
	8/29/91	0.150	<0.010	0.214	0.019	<0.010	<0.010

NUTRIENTS AS N AND P (in mg/l)
** 2-SAMPLE COMPOSITES **

Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
Del R. @ Millrift Railroad Bridge	7/03/91	0.110	<0.010	0.337	0.029	<0.010	<0.010
R.M. 258.40	7/10/91	0.320	<0.010	0.350	0.030	<0.010	<0.010
	7/25/91	0.600	<0.010	0.182	0.018	<0.010	<0.010
	8/22/91	0.230	0.020	0.350	0.015	<0.010	<0.010
	8/29/91	<0.100	<0.010	0.168	0.019	<0.010	<0.010

NUTRIENTS AS N AND P (in mg/l)
** 2-SAMPLE COMPOSITES **

Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
Port Jervis Beach R.M. 255.32	7/01/91	<0.100	<<0.010	0.304	0.024	<0.010	<0.010
	7/09/91	<0.190	<0.010	0.413	0.020	<0.010	<0.010
	7/23/91	0.190	<0.010	0.371	0.015	<0.010	<0.010
	8/13/91	0.320	0.013	0.405	<0.010	<0.010	<0.010
	8/22/91	0.570	0.027	0.354	0.023	<0.010	<0.010
	8/29/91	<0.100	<0.010	0.181	0.017	<0.010	<0.010
Just US of Flo Jean Storm Sewer R.M. 254.76	7/01/91	0.100	<0.010	0.306	0.020	<0.010	<0.010
	7/09/91	0.100	<0.010	0.400	0.023	<0.010	<0.010
	7/23/91	0.180	<0.010	0.360	0.014	<0.010	<0.010
	8/13/91	0.300	<0.010	0.399	0.013	<0.010	<0.010
	8/22/91	0.290	0.018	0.327	0.014	<0.010	<0.010
Port Jervis/Matamoras Bridge (Route 209 Bridge) R.M. 254.75	7/01/91	<0.100	<0.010	0.313	0.020	<0.010	<0.010
	7/09/91	<0.100	<0.010	0.399	0.029	<0.010	<0.010
	7/23/91	0.170	<0.010	0.356	0.013	<0.010	<0.010
	8/13/91	0.340	0.013	0.384	0.013	<0.010	<0.010
	8/22/91	0.130	<0.010	0.321	0.012	<0.010	<0.010
Route 84 Bridge R.M. 253.65	7/01/91	<0.100	<0.010	0.314	0.020	<0.010	<0.010
	7/09/91	0.220	<0.010	0.592	0.020	<0.010	<0.010
	7/23/91	0.150	<0.010	0.359	0.014	<0.010	<0.010
	8/13/91	0.550	<0.010	0.386	<0.010	<0.010	<0.010
	8/22/91	0.690	0.022	0.354	0.019	<0.010	<0.010
Approx. 1000' DS of Neversink River R.M. 253.45	7/01/91	0.160	<0.010	0.284	0.020	<0.010	<0.010
	7/09/91	0.130	0.121	0.400	0.030	0.013	<0.010
	7/23/91	0.110	<0.010	0.341	0.014	<0.010	<0.010
	8/13/91	0.540	<0.010	0.382	0.017	0.014	0.013
	8/22/91	0.290	0.027	0.359	0.022	0.011	0.010
Just US of Milford Landing R.M. 252.55	7/01/91	0.210	<0.010	0.324	0.040	0.018	0.018
	7/09/91	0.470	0.187	0.497	0.057	0.042	0.032
	7/23/91	0.110	<0.010	0.343	0.018	<0.010	<0.010
	8/13/91	0.390	<0.010	0.395	0.012	0.012	0.011
	8/22/91	0.340	0.023	0.428	0.035	0.019	0.018

NUTRIENTS AS N AND P (in mg/l)
** 2-SAMPLE COMPOSITES **

Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
Approx. 1000' DS of Milford Landing R.M. 252.27	7/01/91	0.150	<0.010	0.329	0.023	<0.010	<0.010
	7/09/91	0.170	<0.010	0.424	0.054	0.040	0.015
	7/23/91	<0.100	<0.010	0.344	0.014	<0.010	<0.010
	8/13/91	0.380	<0.010	0.370	0.013	<0.010	<0.010
	8/22/91	0.230	0.025	0.392	0.024	0.012	0.011
Delaware Valley High School R.M. 251.28	7/01/91	0.190	<0.010	0.261	0.022	<0.010	<0.010
	7/09/91	0.680	<0.010	0.390	0.025	<0.010	<0.010
	7/23/91	0.350	<0.010	0.341	0.015	<0.010	<0.010
	8/12/91	0.110	0.046	0.050	<0.010	<0.010	<0.010
	8/13/91	0.450	<0.010	0.401	0.022	0.016	0.015
	8/22/91	0.310	0.021	0.366	0.022	<0.010	<0.010
N. Boundary @ DS end of unnamed island R.M. 249.78	7/01/91	0.100	<0.010	0.274	0.066	<0.010	<0.010
	7/09/91	0.140	0.011	0.391	0.019	<0.010	<0.010
	7/23/91	<0.100	<0.010	0.310	0.016	<0.010	<0.010
	8/12/91	0.260	0.016	0.073	<0.010	<0.010	<0.010
	8/13/91	0.410	<0.010	0.398	0.013	<0.010	<0.010
	8/22/91	0.280	0.021	0.366	0.022	0.011	<0.010
Just US of Vandermark Creek R.M. 247.40	7/01/91	0.150	0.018	0.267	0.068	0.012	0.012
	7/09/91	<0.100	<0.010	0.388	0.034	0.010	<0.010
	7/23/91	0.110	<0.010	0.293	0.022	<0.010	<0.010
	8/13/91	0.300	0.012	0.392	0.018	<0.010	<0.010
	8/22/91	0.240	0.022	0.392	0.035	0.022	0.021
Just DS of Sawkill Creek R.M. 246.92	7/01/91	0.130	<0.010	0.242	0.033	<0.010	<0.010
	7/09/91	0.230	<0.010	0.385	0.034	<0.010	<0.010
	7/23/91	0.100	<0.010	0.309	0.024	<0.010	<0.010
	8/13/91	0.150	<0.010	0.407	0.026	<0.010	<0.010
	8/22/91	0.300	0.026	0.372	0.037	0.018	0.018

NUTRIENTS AS N AND P (in mg/l)
** 2-SAMPLE COMPOSITES **

Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
Milford Beach	7/01/91	0.240	<0.010	0.266	0.047	0.010	<0.010
R.M. 246.30	7/02/91	<0.100	<0.010	0.312	0.030	0.016	0.014
	7/09/91	0.200	<0.010	0.374	0.034	<0.010	<0.010
	7/10/91	1.100	0.012	0.387	0.036	0.010	0.010
	7/23/91	0.130	<0.010	0.291	0.022	<0.010	<0.010
	7/24/91	<0.100	0.012	0.265	0.088	0.038	0.038
	8/13/91	0.530	<0.010	0.392	0.022	0.012	0.012
	8/14/91	0.490	<0.010	0.270	0.026	<0.010	<0.010
	8/21/91	0.230	<0.010	0.452	0.027	0.016	0.016
	8/22/91	0.460	<0.010	0.386	0.028	0.021	0.017
Between Minisink and	7/02/91	<0.100	<0.010	0.275	0.046	0.013	0.012
Namanock Islands	7/10/91	<0.100	0.013	0.370	0.028	0.010	0.010
R.M. 243.21	7/24/91	0.150	<0.010	0.273	0.024	<0.010	<0.010
	8/14/91	0.450	<0.010	0.336	0.024	<0.010	<0.010
	8/21/91	0.380	<0.010	0.465	0.027	0.015	0.015
Just US of Dingmans Creek	7/02/91	<0.100	<0.010	0.260	0.043	0.013	0.012
R.M. 239.24	7/10/91	0.300	0.017	0.373	0.031	<0.010	<0.010
	7/24/91	0.110	<0.010	0.305	0.022	<0.010	<0.010
	8/14/91	0.730	<0.010	0.354	0.019	<0.010	<0.010
	8/21/91	<0.100	<0.010	0.434	0.027	0.015	0.015
Dingmans Access	7/02/91	<0.100	<0.010	0.243	0.029	0.012	0.010
R.M. 238.67	7/10/91	0.150	0.011	0.362	0.028	0.010	0.010
	7/24/91	<0.100	<0.010	0.329	0.023	<0.010	<0.010
	8/14/91	1.340	<0.010	0.341	0.021	<0.010	<0.010
	8/21/91	0.230	<0.010	0.426	0.025	0.015	0.015
Eshback Access	7/02/91	0.100	<0.010	0.228	0.035	0.011	0.011
R.M. 231.97	7/10/91	0.110	<0.010	0.323	0.029	<0.010	<0.010
	7/24/91	<0.100	<0.010	0.288	0.024	<0.010	<0.010
	8/14/91	0.290	<0.010	0.336	0.018	<0.010	<0.010
	8/21/91	<0.100	<0.010	0.405	0.021	0.012	0.012

NUTRIENTS AS N AND P (in mg/l)
** 2-SAMPLE COMPOSITES **

Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
Bushkill Access	7/02/91	<0.100	<0.010	0.226	0.030	0.011	0.010
R.M. 228.11	7/10/91	0.160	<0.010	0.357	0.028	<0.010	<0.010
	7/24/91	<0.100	<0.010	0.277	0.023	<0.010	<0.010
	8/14/91	0.470	<0.010	0.339	0.016	<0.010	<0.010
	8/21/91	0.300	<0.010	0.378	0.026	0.012	0.012
Just US of Flat Brook	7/02/91	<0.100	<0.010	0.218	0.029	0.017	0.015
(Within Walpack Bend)	7/10/91	<0.100	<0.010	0.373	0.030	0.010	0.010
R.M. 225.34	7/24/91	0.170	<0.010	1.500	0.028	<0.010	<0.010
	8/14/91	0.190	<0.010	0.324	0.022	0.012	0.012
	8/21/91	0.380	<0.010	0.392	0.022	0.015	0.015
Approx. 1000' DS of	7/02/91	<0.100	<0.010	0.218	0.029	0.017	0.015
Flat Brook	7/10/91	0.170	<0.010	0.406	0.030	0.010	0.010
R.M. 225.11	7/24/91	0.160	0.021	0.276	0.023	<0.010	<0.010
	8/14/91	0.190	<0.010	0.296	0.023	<0.010	<0.010
	8/21/91	<0.100	<0.010	0.366	0.027	0.014	0.014
Del R. @ US end of	7/02/91	<0.100	<0.010	0.192	0.034	0.014	0.014
Depew Island	7/10/91	<0.100	<0.010	0.398	0.035	0.010	0.010
R.M. 222.16	7/24/91	0.200	<0.010	0.124	0.028	<0.010	<0.010
	8/14/91	0.220	<0.010	0.338	0.024	<0.010	<0.010
	8/21/91	0.280	<0.010	0.363	0.025	0.013	0.013
Approx. 500' DS of	7/02/91	<0.100	0.015	0.130	0.057	0.017	0.017
Pahaquarry Creek	7/10/91	0.220	<0.010	0.350	0.039	0.010	0.010
(Just DS of Poxono Island)	7/24/91	0.259	<0.010	0.163	0.037	0.010	0.010
R.M. 219.64	8/14/91	1.050	<0.010	0.248	0.031	0.015	0.014
	8/21/91	<0.100	0.038	0.190	0.035	0.015	0.013
Smithfield Beach	7/02/91	<0.100	<0.010	0.176	0.034	0.013	0.012
R.M. 218.36	7/10/91	0.200	<0.010	0.394	0.034	0.010	0.010
	7/24/91	0.111	<0.010	0.257	0.026	<0.010	<0.010
	8/14/91	0.120	<0.010	0.309	0.024	<0.010	<0.010
	8/21/91	<0.100	<0.010	0.356	0.021	0.013	0.013

NUTRIENTS AS N AND P (in mg/l)
** 2-SAMPLE COMPOSITES **

Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
Shawnee Resort Access R.M. 214.84	7/02/91	<0.100	<0.010	0.184	0.030	0.011	0.011
	7/10/91	0.330	<0.010	0.353	0.029	<0.010	<0.010
	7/24/91	0.134	<0.010	0.217	0.022	<0.010	<0.010
	8/14/91	0.290	<0.010	0.258	0.017	0.010	0.010
	8/21/91	0.220	<0.010	0.322	0.021	0.012	0.012
Between Shawnee and Schellenburger Islands R.M. 213.06	7/02/91	<0.100	0.011	0.179	0.033	0.012	0.010
	7/10/91	0.230	<0.010	0.345	0.028	<0.010	<0.010
	7/24/91	0.101	<0.010	0.156	0.022	<0.010	<0.010
	8/14/91	0.170	<0.010	0.231	0.016	0.010	0.010
	8/21/91	0.260	<0.010	0.292	0.029	0.019	0.019
Kittatinny Access R.M. 211.58	7/02/91	<0.100	<0.010	0.186	0.038	0.017	0.017
	7/10/91	0.130	0.011	0.362	0.040	0.014	0.014
	7/24/91	0.368	<0.010	0.173	0.029	0.016	0.016
	8/14/91	0.380	<0.010	0.288	0.023	0.023	0.022
	8/21/91	<0.100	<0.010	0.307	0.031	0.019	0.019
Upstream end of Arrow Island R.M. 210.80	7/02/91	<0.100	0.014	0.172	0.043	0.020	0.020
	7/10/91	0.120	<0.010	0.376	0.038	0.015	0.015
	7/24/91	<0.100	<0.010	0.242	0.031	0.017	0.017
	8/14/91	0.300	<0.010	0.303	0.029	0.016	0.016
	8/21/91	0.310	<0.010	0.295	0.032	0.022	0.021

Upper Delaware River
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
E. Branch Del R. @ Rt. 97 Bridge R.M. 332.0	7/02/91	<0.50	62
	7/09/91	0.62	38
	7/24/91	0.33	66
	8/21/91	0.34	184
	8/28/91	<0.30	52
W. Branch Del R. @ Rt. 191 Bridge R.M. 331.90	7/02/91	<0.50	260
	7/09/91	0.76	26
	7/24/91	0.71	1K
	8/21/91	1.31	1600
	8/28/91	0.73	84
Del R. @ Buckingham Access R.M. 325.14	7/02/91	<0.50	84
	7/09/91	1.02	114
	7/24/91	0.72	42
	8/21/91	<0.30	384
	8/28/91	0.46	40
Del R. @ Kellam's Bridge R.M. 312.59	7/02/91	<0.50	32
	7/09/91	0.74	16
	7/24/91	0.30	6
	8/21/91	0.64	83
	8/28/91	0.41	28
Del R. @ Callicoon Access R.M. 303.61	7/02/91	<0.50	52
	7/09/91	0.64	1K
	7/24/91	2.48	8
	8/21/91	1.57	384
	8/28/91	0.31	22

Upper Delaware River
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
Del R. @ Damascus R.M. 298.40	7/02/91	<0.50	10
	7/09/91	1.96	6
	7/24/91	2.33	1K
	8/21/91	0.92	114
	8/28/91	0.48	14
Del R. @ Narrowsburg, N.Y. R.M. 290.10	7/02/91	<0.50	420
	7/09/91	1.26	38
	7/24/91	<0.30	1K
	8/21/91	<0.30	34
	8/28/91	0.45	22
Del R. @ Narrowsburg, PA R.m. 289.60	7/02/91	<0.50	12
	7/03/91	<0.50	40
	7/09/91	<0.50	76
	7/10/91	<0.50	12
	7/24/91	<0.30	12
	7/25/91	0.64	12
	8/21/91	<0.30	22
	8/28/91	0.31	8
Del R. Just US of Lackawaxen R. R.M. 277.74	7/03/91	<0.50	6
	7/10/91	<0.50	1K
	7/25/91	1.01	
	8/22/91	<0.30	56
	8/29/91	0.48	

Upper Delaware River
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
Del R. @ Lackawaxen/Minisink Ford Bridge (Just DS of Lackawaxen R. confluence) R.M. 277.40	7/03/91	<0.50	6
	7/10/91	0.66	8
	7/25/91	1.13	8
	8/22/91	<0.30	104
	8/29/91	3.12	26
Del R. @ Shohola/Barryville Bridge R.M. 273.50	7/03/91	<0.50	496
	7/10/91	0.52	24
	7/25/91	0.73	6
	8/22/91	0.31	88
	8/29/91	0.63	14
Del R. @ Pond Eddy Bridge R.M. 265.50	7/03/91	<0.50	18
	7/10/91	<0.50	1K
	7/25/91	1.53	26
	8/22/91	3.12	8
	8/29/91	0.90	46
Del R. @ Millrift RR Bridge R.m. 258.40	7/03/91	<0.50	
	7/10/91	<0.50	
	7/25/91	0.94	
	8/22/91	<0.30	
	8/29/91	0.62	

Middle Delaware River
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100 ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
Del R. @ Port Jervis Beach R.M. 255.32	7/01/91	0.88	2
	7/09/91	<0.50	2
	7/23/91	0.81	2
	8/13/91	0.57	12
	8/22/91	<0.30	12
	8/29/91	0.42	38
Del R. just US of Flo Jean Storm Sewer R.M. 254.76	7/01/91	<0.50	4
	7/09/91	0.62	3
	7/23/91	<0.30	6
	8/13/91	0.85	15
	8/22/91	0.53	16
Port Jervis/Matamoras Bridge (Route 209 Bridge) R.M. 254.75	7/01/91	<0.50	2
	7/09/91	0.66	124
	7/23/91	<0.30	10
	8/13/91	0.77	10
	8/22/91	<0.30	400
Route 84 Bridge R.M. 253.65	7/01/91	0.82	28
	7/09/91	0.68	24
	7/23/91	<0.30	22
	8/13/91	1.17	22
	8/22/91	<0.30	52
Approx. 1000' DS of Neversink River R.M. 253.45	7/01/91	<0.50	28
	7/09/91	<0.50	34
	7/23/91	<0.30	38
	8/13/91	2.27	32
	8/22/91	<0.30	42

Middle Delaware River
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100 ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
Just US of Milford Landing R.M. 252.55	7/01/91	<0.50	36
	7/09/91	3.34	24
	7/23/91	0.55	20
	8/13/91	0.57	18
	8/22/91	<0.30	32
Approx. 1000' DS of Milford Landing R.M. 252.27	7/01/91	<0.50	46
	7/09/91	2.42	20
	7/23/91	<0.30	18
	8/13/91	1.07	15
	8/22/91	<0.30	28
Delaware Valley High School R.M. 251.28	7/01/91	<0.50	10
	7/09/91	1.52	9
	7/23/91	<0.30	8
	8/12/91	<0.30	
	8/13/91	0.86	7
	8/22/91	<0.30	27
N. Boundary @ DS end of unnamed island R.M. 249.78	7/01/91	<0.50	13
	7/09/91	3.92	10
	7/23/91	<0.30	18
	8/12/91	0.52	
	8/13/91	0.57	19
	8/22/91	<0.30	15
Just US of Vandermark Creek R.M. 247.4	7/01/91	<0.50	6
	7/09/91	2.22	1K
	7/23/91	0.53	5
	8/13/91	0.88	17
	8/22/91	<0.30	8

Middle Delaware River
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100 ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
Just DS of Sawkill Creek R.M. 246.92	7/01/91	<0.50	14
	7/09/91	2.52	17
	7/23/91	<0.30	9
	8/13/91	0.72	11
	8/22/91	<0.30	20
Milford Beach R.M. 246.30	7/01/91	<0.50	10
	7/02/91	<0.50	
	7/09/91	1.70	7
	7/10/91	<0.50	19
	7/23/91	<0.30	19
	7/24/91	0.64	1K
	8/13/91	0.81	21
	8/14/91	0.48	67
	8/21/91	0.36	18
	8/22/91	<0.30	17
Between Minisink and Namanock Islands R.M. 243.21	7/02/91	<0.50	13
	7/10/91	<0.50	2
	7/24/91	0.63	127
	8/14/91	0.46	37
	8/21/91	0.44	18
Just US of Dingmans Creek R.M. 239.24	7/02/91	<0.50	5
	7/10/91	<0.50	2
	7/24/91	0.32	39
	8/14/91	<0.30	14
	8/21/91	<0.30	16

Middle Delaware River
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100 ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
Dingmans Access R.M. 238.67	7/02/91	<0.50	4
	7/10/91	<0.50	2
	7/24/91	1.34	47
	8/14/91	<0.30	13
	8/21/91	<0.30	10
Eshback Access R.M. 231.97	7/02/91	<0.50	1
	7/10/91	<0.50	1
	7/24/91	1.03	10
	8/14/91	0.31	3
	8/21/91	<0.30	9
Bushkill Access R.M. 228.11	7/02/91	<0.50	10
	7/10/91	<0.50	1K
	7/24/91	0.58	6
	8/14/91	<0.30	2
	8/21/91	<0.30	13
Just US of Flat Brook (Within Walpack Bend) R.M. 226.34	7/02/91	<0.50	1
	7/10/91	8.76	1
	7/24/91	1.58	6
	8/14/91	<0.30	7
	8/21/91	0.42	6
Approx. 1000' DS of Flat Brook R.M. 225.11	7/02/91	<0.50	2
	7/10/91	2.94	1
	7/24/91	2.04	8
	8/14/91	<0.30	5
	8/21/91	<0.30	38

Middle Delaware River
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100 ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
Del R. @ US end Depew Island R.M. 222.16	7/02/91	<0.50	1
	7/10/91	<0.50	1K
	7/24/91	<0.30	9
	8/14/91	<0.30	2
	8/21/91	<0.30	17
Approx. 500' DS of Pahaquarry Creek (Just DS of Poxono Island) R.M. 219.64	7/02/91	<0.50	5
	7/10/91	5.26	1
	7/24/91	0.98	58
	8/14/91	0.96	1
	8/21/91	0.42	37
Smithfield Beach R.M. 218.36	7/02/91	<0.50	2
	7/10/91	<0.50	1
	7/24/91	<0.30	1K
	8/14/91	0.41	3
	8/21/91	<0.30	24
Shawnee Resort Access R.M. 214.84	7/02/91	<0.50	4
	7/10/91	2.00	1K
	7/24/91	<0.30	3
	8/14/91	0.35	7
	8/21/91	<0.30	
Between Shawnee and Schellenburger Islands R.m. 213.06	7/02/91	<0.50	4
	7/10/91	<0.50	1K
	7/24/91	<0.30	4
	8/14/91	0.52	4
	8/21/91	0.42	4

Middle Delaware River
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100 ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
Kittatinny Access R.M. 211.58	7/02/91	<0.50	76
	7/10/91	<0.50	1K
	7/24/91	<0.30	8
	8/14/91	<0.30	1K
	7/24/91	0.33	1K
Upstream end of Arrow Island R.M. 210.80	7/02/91	<0.50	12
	7/10/91	<0.50	1K
	7/24/91	0.33	1K
	8/14/91	<0.30	1
	8/21/91	0.48	8

River Total Phosphorus (mg/l)					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
332.00	5	0.0160	0.0048	0.010	0.023
331.90	5	0.0322	0.0168	0.015	0.055
325.14	5	0.0222	0.0047	0.016	0.029
312.59	5	0.0202	0.0028	0.017	0.025
303.61	5	0.0222	0.0056	0.014	0.031
298.40	5	0.0276	0.0095	0.019	0.046
290.10	5	0.0162	0.0032	0.012	0.020
289.60	8	0.0211	0.0087	0.012	0.036
277.74	5	0.0256	0.0063	0.018	0.037
277.40	5	0.0288	0.0122	0.014	0.051
273.50	5	0.0322	0.0235	0.018	0.079
265.50	5	0.0214	0.0038	0.017	0.026
258.40	5	0.0222	0.0061	0.015	0.030
255.32	6	0.0182	0.0048	0.010	0.024
254.76	5	0.0168	0.0040	0.013	0.023
254.75	5	0.0174	0.0065	0.012	0.029
253.65	5	0.0166	0.0040	0.010	0.020
253.45	5	0.0206	0.0054	0.014	0.030
252.55	5	0.0324	0.0161	0.012	0.057
252.27	5	0.0256	0.0149	0.013	0.054
251.28	6	0.0193	0.0052	0.010	0.025
249.78	6	0.0243	0.0190	0.010	0.066
247.40	5	0.0354	0.0176	0.018	0.068
246.92	5	0.0308	0.0050	0.024	0.037
246.30	10	0.0360	0.0187	0.022	0.088
243.21	5	0.0298	0.0083	0.024	0.046
239.24	5	0.0284	0.0084	0.019	0.043
238.67	5	0.0252	0.0030	0.021	0.029
231.97	5	0.0254	0.0060	0.018	0.035
228.11	5	0.0246	0.0049	0.016	0.030
225.34	5	0.0262	0.0035	0.022	0.030
225.11	5	0.0264	0.0029	0.023	0.030
222.16	5	0.0292	0.0045	0.024	0.035
219.64	5	0.0398	0.0090	0.031	0.057

River Total Phosphorus (mg/l) Cont.

River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
218.36	5	0.0278	0.0053	0.021	0.034
214.84	5	0.0238	0.0050	0.017	0.030
213.06	5	0.0256	0.0060	0.016	0.033
211.58	5	0.0322	0.0062	0.023	0.040
210.80	5	0.0346	0.0052	0.029	0.043

River Total Nitrogen (mg/l)					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
332.00	5	0.7256	0.2588	0.326	1.057
331.90	5	0.7202	0.3369	0.295	1.132
325.14	5	0.7248	0.3258	0.233	1.222
312.59	5	0.8638	0.2313	0.670	1.177
303.61	5	0.6202	0.0597	0.541	0.722
298.40	5	0.7050	0.2263	0.557	1.156
290.10	5	0.7880	0.4236	0.326	1.569
289.60	8	0.6408	0.1129	0.496	0.846
277.74	5	0.6050	0.1833	0.282	0.826
277.40	5	0.5688	0.1908	0.333	0.812
273.50	5	0.7442	0.1918	0.484	0.952
265.50	5	0.3960	0.1139	0.231	0.557
258.40	5	0.5494	0.1785	0.268	0.782
255.32	6	0.5830	0.2084	0.281	0.924
254.76	5	0.5524	0.1000	0.406	0.699
254.75	5	0.5226	0.1080	0.413	0.724
253.65	5	0.7430	0.2431	0.414	1.044
253.45	5	0.5992	0.1775	0.444	0.922
252.55	5	0.7014	0.1853	0.453	0.967
252.27	5	0.5778	0.1091	0.444	0.750
251.28	6	0.6498	0.2883	0.160	1.070
249.78	6	0.5170	0.1670	0.333	0.808
247.40	5	0.5264	0.1160	0.403	0.692
246.92	5	0.5250	0.1163	0.372	0.672
246.30	10	0.6975	0.3194	0.365	1.487
243.21	5	0.5798	0.1957	0.375	0.845
239.24	5	0.6132	0.2588	0.360	1.084
238.67	5	0.7242	0.4894	0.343	1.681
231.97	5	0.4560	0.1028	0.328	0.626
228.11	5	0.5414	0.1813	0.326	0.809
225.34	5	0.7494	0.4829	0.318	1.670
225.11	5	0.4564	0.0835	0.318	0.576
222.16	5	0.4630	0.1351	0.292	0.643
219.64	5	0.5620	0.3862	0.230	1.298

River Total Nitrogen (mg/l) Cont.					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
218.36	5	0.4246	0.1049	0.276	0.594
214.84	5	0.4816	0.1447	0.284	0.683
213.06	5	0.4128	0.1327	0.257	0.575
211.58	5	0.4788	0.1282	0.286	0.668
210.80	5	0.4636	0.1356	0.272	0.605

River TKN Nitrogen (mg/l)					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
332.00	5	0.2980	0.1869	0.110	0.640
331.90	5	0.2740	0.1152	0.100	0.460
325.14	5	0.3100	0.2490	0.100	0.780
312.59	5	0.3620	0.2574	0.100	0.700
303.61	5	0.1580	0.0917	0.100	0.340
298.40	5	0.2720	0.2494	0.100	0.760
290.10	5	0.4160	0.4238	0.100	1.200
289.60	8	0.1938	0.1417	0.100	0.520
277.74	5	0.3020	0.1158	0.180	0.510
277.40	5	0.2880	0.1599	0.100	0.490
273.50	5	0.3840	0.2052	0.100	0.680
265.50	5	0.1440	0.0441	0.100	0.220
258.40	5	0.2720	0.1830	0.100	0.600
255.32	6	0.2450	0.1630	0.100	0.570
254.76	5	0.1940	0.0875	0.100	0.300
254.75	5	0.1680	0.0898	0.100	0.340
253.65	5	0.3420	0.2344	0.100	0.690
253.45	5	0.2460	0.1598	0.110	0.540
252.55	5	0.3040	0.1286	0.110	0.470
252.27	5	0.2060	0.0965	0.100	0.380
251.28	6	0.3483	0.1842	0.110	0.680
249.78	6	0.2150	0.1128	0.100	0.410
247.40	5	0.1800	0.0777	0.100	0.300
246.92	5	0.1820	0.0730	0.100	0.300
246.30	10	0.3580	0.2913	0.100	1.100
243.21	5	0.2360	0.1489	0.100	0.450
239.24	5	0.2680	0.2433	0.100	0.730
238.67	5	0.3840	0.4804	0.100	1.340
231.97	5	0.1400	0.0751	0.100	0.290
228.11	5	0.2260	0.1422	0.100	0.470
225.34	5	0.1880	0.1026	0.100	0.380
225.11	5	0.1440	0.0372	0.100	0.190
222.16	5	0.1800	0.0704	0.100	0.280
219.64	5	0.3458	0.3578	0.100	1.050

River TKN Nitrogen (mg/l) Cont.					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
218.36	5	0.1262	0.0377	0.100	0.200
214.84	5	0.2148	0.0879	0.100	0.330
213.06	5	0.1722	0.0653	0.100	0.260
211.58	5	0.2156	0.1299	0.100	0.380
210.80	5	0.1860	0.0975	0.100	0.310

River NO2+NO3 Nitrogen (mg/l)					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
332.00	5	0.4276	0.2739	0.175	0.774
331.90	5	0.4462	0.2442	0.123	0.672
325.14	5	0.4148	0.1659	0.123	0.631
312.59	5	0.5018	0.0547	0.427	0.570
303.61	5	0.4622	0.0508	0.382	0.528
298.40	5	0.4330	0.0426	0.374	0.490
290.10	5	0.3720	0.0967	0.226	0.478
289.60	8	0.4470	0.0585	0.326	0.516
277.74	5	0.3030	0.1228	0.072	0.409
277.40	5	[illegible]	0.0726	0.181	0.398
273.50	5	[illegible]	[illegible]	0.284	0.452
265.50	5	[illegible]	[illegible]	0.131	0.385
258.40	5	0.2774	[illegible]	0.168	0.350
255.32	5	0.3380	0.4148	0.181	0.413
254.76	5	0.3584	0.0377	0.306	0.400
254.75	5	0.3546	0.0338	0.313	0.399
253.65	5	0.4010	[illegible]	0.314	0.592
253.45	5	0.3532	0.0400	0.284	0.400
252.55	5	0.3974	0.0620	0.324	0.497
252.27	5	0.3718	0.0339	0.329	0.424
251.28	5	0.3015	0.1213	0.050	0.407
249.78	6	0.3020	0.1114	0.073	0.398
247.40	5	0.3464	0.0549	0.267	0.392
246.92	5	0.3430	0.0601	0.242	0.407
246.30	10	0.3395	0.0632	0.265	0.452
243.21	5	0.3438	0.0710	0.273	0.465
239.24	5	0.3452	0.0590	0.260	0.434
238.67	5	0.3402	0.0590	0.243	0.426
231.97	5	0.3160	0.0581	0.228	0.405
228.11	5	0.3154	0.0560	0.226	0.378
225.34	5	0.5614	0.4732	0.218	1.500
225.11	5	0.3124	0.0665	0.218	0.406
222.16	5	0.2830	0.1060	0.124	0.398
219.64	5	0.2162	0.0773	0.130	0.350

River NO2+NO3 Nitrogen (mg/l) Cont.

River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
218.36	5	0.2984	0.0765	0.176	0.394
214.84	5	0.2668	0.0631	0.184	0.353
213.06	5	0.2406	0.0701	0.156	0.345
211.58	5	0.2632	0.0727	0.173	0.362
210.80	5	0.2776	0.0679	0.172	0.376

River NH3+NH4 Nitrogen (mg/l)					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
332.00	5	0.0100	0.0000	0.010	0.010
331.90	5	0.0104	0.0008	0.010	0.012
325.14	5	0.0114	0.0023	0.010	0.016
312.59	5	0.0136	0.0064	0.010	0.026
303.61	5	0.0100	0.0000	0.010	0.010
298.40	5	0.0134	0.0045	0.010	0.021
290.10	5	0.0106	0.0000	0.010	0.010
289.60	5	0.0106	0.0011	0.010	0.013
277.74	5	0.0142	0.0080	0.010	0.031
277.40	5	0.0134	0.0008	0.010	0.012
273.50	5	0.0126	0.0052	0.010	0.023
265.50	5	0.0136	0.0048	0.010	0.023
258.40	5	0.0120	0.0040	0.010	0.020
255.32	6	0.0133	0.0062	0.010	0.027
254.76	5	0.0116	0.0032	0.010	0.018
254.75	5	0.0106	0.0012	0.010	0.013
253.65	5	0.0124	0.0048	0.010	0.022
253.45	5	0.0356	0.0432	0.010	0.121
252.55	5	0.0480	0.0697	0.010	0.187
252.27	5	0.0130	0.0060	0.010	0.025
251.28	6	0.0178	0.0132	0.010	0.046
249.78	6	0.0130	0.0042	0.010	0.021
247.40	5	0.0144	0.0048	0.010	0.022
246.92	5	0.0132	0.0064	0.010	0.026
246.30	10	0.0104	0.0008	0.010	0.012
243.21	5	0.0106	0.0012	0.010	0.013
239.24	5	0.0114	0.0028	0.010	0.017
238.67	5	0.0102	0.0004	0.010	0.011
231.97	5	0.0100	0.0000	0.010	0.010
228.11	5	0.0100	0.0000	0.010	0.010
225.34	5	0.0100	0.0000	0.010	0.010
225.11	5	0.0122	0.0044	0.010	0.021
222.16	5	0.0100	0.0000	0.010	0.010
219.64	5	0.0166	0.0109	0.010	0.038

River NH3+NH4 Nitrogen (mg/l) Cont.

River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
218.36	5	0.0100	0.0000	0.010	0.010
214.84	5	0.0100	0.0000	0.010	0.010
213.06	5	0.0102	0.0004	0.010	0.011
211.58	5	0.0102	0.0004	0.010	0.011
210.80	5	0.0108	0.0016	0.010	0.014

River BOD5 (mg/l)

River Mi	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
332.00	5	0.4180	0.1227	0.300	0.620
331.90	5	0.8020	0.2701	0.500	1.310
325.14	5	0.6000	0.2492	0.300	1.020
312.59	5	0.5180	0.1573	0.300	0.740
303.61	5	1.1000	0.8150	0.310	2.480
298.40	5	1.2380	0.7660	0.480	2.330
290.10	5	0.5620	0.3580	0.300	1.260
289.60	8	0.4438	0.1175	0.300	0.640
277.74	5	0.6080	0.2382	0.300	1.010
277.40	5	0.6020	0.2887	0.300	1.130
273.50	5	0.5380	0.1408	0.310	0.730
265.50	5	1.3100	0.9803	0.500	3.120
258.40	5	0.5720	0.2108	0.300	0.940
255.32	6	0.5800	0.2055	0.300	0.880
254.76	5	0.5600	0.1788	0.300	0.850
254.75	5	0.5060	0.1888	0.300	0.770
253.65	5	0.6540	0.3302	0.300	1.170
253.45	5	0.7740	0.7533	0.300	2.270
252.55	5	1.0720	1.1403	0.300	3.340
252.27	5	0.9180	0.8022	0.300	2.420
251.28	6	0.6300	0.4451	0.300	1.520
249.78	6	1.0183	1.3019	0.300	3.920
247.40	5	0.8860	0.6926	0.300	2.220
246.92	5	0.8680	0.8404	0.300	2.520
246.30	10	0.6090	0.3920	0.300	1.700
243.21	5	0.5060	0.0662	0.440	0.630
239.24	5	0.3840	0.0950	0.300	0.500
238.67	5	0.5880	0.3865	0.300	1.340
231.97	5	0.5280	0.2657	0.300	1.030
228.11	5	0.4560	0.1433	0.300	0.680
225.34	5	2.3120	3.2565	0.300	8.760
225.11	5	1.2160	1.0809	0.300	2.940
222.16	5	0.3800	0.0980	0.300	0.500
219.64	5	1.6240	1.8324	0.420	5.260

River BOD5 (mg/l) Cont.					
River Mi	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
218.36	5	0.4020	0.0895	0.300	0.500
214.84	5	0.6900	0.6591	0.300	2.000
213.06	5	0.4480	0.0816	0.300	0.520
211.58	5	0.3860	0.0937	0.300	0.500
210.80	5	0.4220	0.0882	0.300	0.500

River Fecal Coliform (No./100 ml)

River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
332.00	5	80.40	52.69	38	184
331.90	5	394.20	609.65	1	1600
325.14	5	132.80	128.60	40	384
312.59	5	33.00	26.62	6	83
303.61	6	78.00	137.96	1	384
298.40	5	29.00	42.72	1	114
290.10	5	103.00	159.02	1	420
289.60	8	25.50	21.90	8	76
277.74	3	21.00	24.83	1	56
277.40	5	28.40	38.40	2	104
273.50	5	125.60	187.45	6	496
265.50	5	19.80	15.63	1	46
255.32	6	11.33	12.74	2	38
254.76	5	8.80	5.56	3	16
254.75	5	109.20	152.29	2	400
253.65	5	29.60	11.41	22	52
253.45	5	34.80	4.83	28	42
252.55	5	26.40	6.62	18	36
252.27	5	25.60	10.98	16	46
251.28	5	12.20	7.47	7	27
249.78	5	13.80	3.06	10	19
247.40	5	7.40	5.31	1	17
246.92	5	14.20	3.97	9	20
246.30	9	19.89	17.81	1	67
243.21	5	39.40	45.24	2	127
239.24	5	15.20	13.01	2	39
238.67	5	15.20	16.39	2	47
231.97	5	5.80	5.46	1	15
228.11	5	6.60	4.88	1	14
225.34	5	7.80	6.34	2	20
225.11	5	10.80	13.82	1	38
222.16	5	6.00	6.26	1	17
219.64	5	20.40	23.15	1	58
218.36	5	6.20	8.93	1	24

River Fecal Coliform (No./100 ml) Cont.					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
214.84	4	3.75	2.17	1	7
213.06	5	3.40	1.20	1	4
211.58	5	17.40	29.43	1	76
210.80	5	4.60	4.59	1	12

APPENDIX C

ROUTINE TRIBUTARY MONITORING DATA

Key

K = Less Than
L = Greater Than
$ = Calculated

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM-FCBR /100ML	31[illegible] FEC [illegible] /100ML
FACTORY CREEK AT RT 191 BRIDGE, PA - RIVER MILE 32[illegible], 0.[illegible]									
DRBC/NP586									
91/07/11	1315	25.0	18.0	8.[illegible]	9[illegible].5$	7.00	7[illegible]	1[illegible]	
EQUINUNK CREEK AT TOWNSHIP BRIDGE, PA - RIVER MILE 332.5, 0.4									
DRBC/NP585									
91/07/02	0925	21.0	20.0	9.1	90.9$	6.50	65	[illegible]	
91/07/09	0945	23.0	20.0	9.0	97.8$	6.50	65	24	
91/07/11	1405		22.0	8.1	92.0$	6.50	72	38	
91/07/24	1000	22.0	20.0	8.7	94.6$	6.50	60	58	
91/08/15	1030	22.5	18.5	7.9	83.2$	7.00	85	32	
91/08/21	1000	22.0	18.0	8.7	91.6$	6.50	60		
91/08/28	0930	22.0	20.0	8.0	87.0$	6.50	70	11	
CALLICOON CREEK AT RT 97 BRIDGE, NY - RIVER MILE 303.6, 0.3									
DRBC/NP575									
91/07/02	1020	21.0	20.0	12.0	130.4$	6.50	130	148	
91/07/09		24.0	23.0	10.1	116.1$	8.00	125	196	
91/07/24	1055	25.0	24.0	10.5	123.5$	8.00	130	1600	
91/07/31	1105	21.0	21.8	10.4	118.2$	8.50	148	128	
91/08/21	1135	22.0	20.5	9.[illegible]	10[illegible].1$	7.50	120	1600	
91/08/28	1025	28.0	22.0	10.0	113.6$	8.00	130	1600	
CALKINS CREEK NEAR CONFLUENCE WITH DELAWARE RIVER, PA - RIVER MILE 295.6, 0.[illegible]									
DRBC/NP569									
91/07/02	1135	28.0	20.0	10.[illegible]	11[illegible]	7.00	70	4[illegible]	
91/07/09	1210	[illegible]	23.0	[illegible]	10[illegible]$	8.00	80	[illegible]	
91/07/15	1225	24.0	21.0	[illegible]	[illegible]$	7.50	90		
91/07/[illegible]	1220	[illegible]	[illegible]	[illegible]	[illegible]$	7.50	[illegible]	[illegible]	
91/08/[illegible]	1300	[illegible]	[illegible]	[illegible]	[illegible]	7.00	[illegible]	1	
91/08/[illegible]	1140	[illegible]	21.4	[illegible]	10[illegible]	7.00	8[illegible]	11	

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                              00020    00010    00300    00301    00400    00095    31616    [illegible]
 DATE   TIME                  AIR      WATER    DO       DO       PH       CNDUCTVY FEC COLI FEC STREP
 FROM    OF                   TEMP     TEMP              SATUR             AT 25C   MFM-FCBR MF M-ENT
  TO    DAY                   CENT     CENT     MG/L     PERCENT  SU       MICROMHO /100ML   /100ML
======= ==== ====== ====== ===========================================================================

HICO CREEK AT ROUTE 652, PA   RIVER MILE 289.6, 0.4
DRBC/NPS1161

91/06/20 0845                 21.0     18.0     8.5      89.5$    6.50     70       46
91/07/15 1055                 24.0     16.0     8.1      81.0$    6.50     113      1K


EAST BRANCH TENMILE RIVER NEAR CONFL. WITH TENMILE RIVER   RIVER MILE 284.2, 1.4, 0.1
DRBC/NPS64

91/08/22 0740                 21.0     17.0     9.4      96.3$    7.00     90       62


TENMILE RIVER AT RT 97 BRIDGE, NY - RIVER MILE 284.2, 1.4, 0.1
DRBC/NPS65

91/07/03 0835                 23.0     18.0     8.5      89.5$    6.00     75       24
91/07/10 0900                 18.0     16.0     8.9      89.0$    7.00     60       10
91/07/25 0840                 20.0     19.0     8.9      94.7$    7.00     60       10
91/07/31 1218                 24.5     20.8     8.6      95.6$    7.00     83       6
91/08/21 1415                 26.0     23.5     8.9      102.3$   7.00     75       100
91/08/28 1300                 31.0     23.5     9.1      104.6$   7.00     90       1K
91/08/29 0730                 21.0     18.0     9.4      98.9$    7.00     90       1K


MASTHOPE CREEK AT RR BRIDGE NEAR CONFLUENCE WITH DELAWARE RIVER   RIVER MILE 282.5, 0.1
DRBC/NPS63

91/07/03 0920                 23.0     19.0     9.1      96.8$    6.50     50       30
91/07/10 1000                          18.0     8.8      9[illegible].6$  7.00     50       13
91/07/25 1020                 20.0     20.5     9.0      9[illegible].8$  7.00     50       8
91/08/19 1420                 22.0     20.0     8.5      9[illegible].4$  7.00     67       138
91/08/22 0820                 22.0     17.0     8.5      87.6$    7.00     55       [illegible]
91/08/29 0815                 21.0     19.0     8.6      91.4$    7.00     55       1[illegible]


[illegible] FALLS AT RT 97 BRIDGE, NY   RIVER MILE [illegible] 0.1
DRBC/NPS[illegible]
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                                       00020    00010    00300    00301    00400    00095    31616    31673
 DATE   TIME                            AIR     WATER     DO       DO       PH     CNDUCTVY FEC COLI FEC STREP
 FROM    OF                             TEMP    TEMP               SATUR            AT 25C  MFM-FCBR MF M-ENT
  TO    DAY                             CENT    CENT     MG/L     PERCENT    SU    MICROMHO  /100ML    /100ML
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LACKAWAXEN CREEK AT RT 590 BRIDGE, PA   RIVER MILE 277.7, 0.1
DRBC/NPS59

91/07/03 0945                           23.0     20.0      8.1     89.0$     6.50       75       27
91/07/10 1030                           30.0     24.0      9.1    108.1$     7.00       90       20
91/07/25 1050                           20.0     20.0      9.4    103.4$     7.00       70       12
91/08/12 1350                           28.0     23.5      9.1    104.6$     8.00       74        8
91/08/22 0845                           23.0     20.0      8.9     97.9$     7.00       85        9
91/08/29 0840                           21.0     23.0      7.9     90.8$     7.00       90       11


BEAVER BROOK AT RT 97 BRIDGE, NY - RIVER MILE 275.5, 0.2
DRBC/NPS58

91/07/03 1035                           23.0     19.0      9.2     99.4$     6.50       50       22
91/07/10 1120                           30.0     18.0      9.9    104.8$     7.00       55       10
91/07/25 1150                           24.0     20.0      9.0     97.8$     7.00       60       64
91/07/31 1319                           27.0     20.9      8.6     95.6$     7.00       70       12
91/08/12 1330                           26.0     18.0      8.6     90.5$     7.00       71       16
91/08/22 1000                           24.0     19.0      9.2     97.9$     7.00       60        8
91/08/29 0930                           28.0     19.0      9.2     97.9$     7.00       60       13


HALFWAY BROOK AT RT 97 BRIDGE, NY - RIVER MILE 273.4, 0.2
DRBC/NPS57

91/06/20 1053                           30.0     19.0      9.0     95.7$     6.50      110       41
91/07/03 1120                           23.0     17.0      9.3     95.9$     6.50      135      104
91/07/10 1150                           30.0     18.0      9.1     96.3$     7.00      170        5
91/07/25 1230                           24.0     20.5      8.2     91.6$     7.00      150       24
91/08/12 1215                           25.0     17.5      8.9     91.8$     7.00      140       28
91/08/22 1110                           24.0     22.0      9.0    102.8$     7.00      100       20
91/08/29 1010                           28.0     20.5      8.9     98.9$     7.00      125   [illegible]
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DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM-FCBR /100ML	31673 FECSTREP MF /100ML
SHOHOLA CREEK AT RAILROAD BRIDGE, PA - RIVER MILE [illegible], 0.2 DRBC/NPS56									
91/07/03	1135	23.0	19.0	9.1	96.8$	6.50	55	12	
91/07/10	1212	30.0	20.0	9.0	97.8$	7.00	60	12	
91/07/25	1250	24.0	21.0	8.7	96.7$	7.00	60	26	
91/08/12	1040	24.0	17.8	9.0	94.7$	7.00	74	8	
91/08/22	1050	24.0	20.0	9.2	100.0$	7.00	60	24	
91/08/29	1030	28.0	21.0	8.9	98.9$	7.00	60	10	
MONGAUP RIVER AT RT 97 BRIDGE, NY - RIVER MILE 261.1, 0.2 DRBC/NPS51									
91/07/03	1230	24.0	19.0	9.4	100.0$	6.00	75	33	
91/07/10	1305	30.0	23.0	8.4	103.0$	7.00	75	6	
91/07/31	1400	28.0	22.0	8.2	93.2$	6.50	92	54	
91/08/08	1230	25.0	20.5	8.6	93.5$	6.50	94	50	
91/08/22	1215	24.0	20.5	8.8	96.7$	7.00	80	30	
91/08/29	1155	30.0	22.0	8.5	96.6$	7.00	90	4	
NEVERSINK RIVER AT RT 6 BRIDGE, NY - RIVER MILE 253.6, 0.6 DRBC/NPS50									
91/06/07	0905	14.0	18.0			7.00		33	
91/06/10	0910		20.0	7.8	84.8$	7.00	92	76	
91/06/19	0945	18.0	20.0	7.5	81.5$	7.00	95	430	
91/06/26	1010	22.0	21.0	8.2	91.1$	7.00	95	36	
91/07/16	1055	25.0	22.2	7.5	86.4$	7.00	109	[illegible]	
91/07/31	0936	24.0	21.0	9.0	100.0$	6.80	108	220	
91/09/05	1220	25.0	20.0	8.4	91.3$	6.50	107	88	

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                                     00020    00010    00300    00301    00400    00095    31616    31679
  DATE   TIME                         AIR     WATER     DO       DO       PH     CNDUCTVY FEC COLI FEC STRP
  FROM    OF                          TEMP     TEMP             SATUR             AT 25C  MFM-FCBR MF M-ENT
   TO    DAY                          CENT     CENT     MG/L    PERCENT    SU    MICROMHO  /100ML   /100ML
======================================================================================================

CUMMINS CREEK, PA - RIVER MILE 250.1, 0.3
DRBC/NPS108

91/07/01 1130                         24.0     16.0     9.0     90.0$    6.50       73       15
91/07/09 1040                         21.0     14.1     8.9     85.6$    6.50       80        6
91/07/16 1346                         30.0     13.6     8.8     84.6$    6.50       89        1
91/07/23 1145                         30.0     15.0     8.5     83.3$    6.50       86       43
91/07/31 1156                         27.0     15.0     8.5     83.3$    6.50       60        3
91/08/20 1100                         17.0     16.0     8.9     89.0$    6.50       65
91/08/22 1250                         22.0     17.0     9.1     93.8$    6.50       66       47
91/09/05 1334                         27.0                                                  21

VANDERMARK CREEK AT ROUTE 209 BRIDGE, PA - RIVER MILE 247.3, 0.4
DRBC/NPS49

91/06/10 1035                         27.0     14.0     9.5     91.3$    7.00       83      118
91/06/19 1040                         19.0     15.0    10.2    100.0$    7.00       65      408
91/06/26 1140                         28.0     15.0     9.8     96.1$    7.00       95      360
91/07/01 1200                         23.5     16.0     9.7     97.0$    7.00      130       78
91/07/09 1005                         21.0     15.0     9.6     94.1$    7.00      137       66
91/07/16 1401                         28.0     16.8     9.7    100.0$    7.00      143       46
91/07/23 1115                         28.0     17.0     9.6     94.0$    7.00      141      133
91/07/31 1053                         27.0     16.0     9.8     98.0$    7.00      109       52
91/08/13 1515                         26.5     19.0     9.7    103.2$    7.00      121       10
91/08/20 1030                         17.0     15.8     9.3     93.0$    7.00       92
91/08/22 1435                         22.0     16.4     9.1     91.0$    7.00      111       48
91/09/05 1359                         28.0     16.0     9.1     91.0$    7.00      108       50
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                                   00020    00010    00300    00301    00400    00095    31616    31673
 DATE   TIME                        AIR     WATER     DO       DO       PH    CNDUCTVY  FEC COLI FECSTREP
 FROM    OF                         TEMP     TEMP             SATUR             AT 25C  MFM-FCBR MF M-ENT
  TO    DAY                         CENT     CENT     MG/L   PERCENT    SU    MICROMHO   /100ML   /100ML

SAWKILL CREEK AT RT 209 BRIDGE, PA - RIVER MILE [illegible], 0.4
DRBC/NPS48

91/06/06 1505                       24.0     17.0     9.8    101.0$    7.00      72       23
91/06/10 1055                       27.0     16.0     9.1     91.0$    7.00      79       46
91/06/19 1100                       19.0     17.0     9.2     94.8$    7.00      75      100
91/06/26 1155                       25.0     18.0     9.2     96.8$    7.00      86       11
91/07/01 1230                       23.0     20.0     8.7     94.6$    7.00     107       24
91/07/09 0935                       22.0     18.5     8.6     90.5$    7.00     107       28
91/07/16 1415                       27.0     21.0     8.8     97.8$    7.00     113       16      400
91/07/23 1044                       27.5     20.5     8.4     91.3$    7.50     100       18
91/07/31 1040                       24.0     18.5     8.9     93.7$    7.00      97       16
91/08/13 1404                       28.0     20.0     8.9     96.7$    7.00     107       14
91/08/20 0950                       18.0     17.9     8.8     92.6$    7.00     102
91/08/22 1410                       24.0     20.0     8.5     92.4$    7.00     105       40
91/09/05 1352                       25.0     19.0     8.7     92.6$    7.00     100       96


SHIMERS BROOK AT RT 521 BRIDGE, NJ - RIVER MILE 246.6, 0.7
DRBC/NPS47

91/06/10 1125                       24.0     19.0     8.8     93.6$    8.80     301  [illegible]
91/06/19 1150                       19.0     19.0     8.9     94.7$    8.50     279       66
91/06/26 1230                       27.0     20.0     8.9     96.7$    8.00     290        4
91/07/16 0945                       21.0     17.5     8.6     88.7$    8.00     347  [illegible]
91/07/31 1122                       25.0     21.0     8.7     96.7$    8.00     315  [illegible]
91/08/22 1030                       18.5     18.5     8.5     87.5$    8.00     364  [illegible]


RAYMONSKILL CREEK AT DEWA BOUNDARY, PA - RIVER MILE [illegible], 3.0
DRBC/NPS451

91/06/10 1325                       27.0     21.0 [illegible] 91.1$    7.00      56       14
91/06/20 1000                       21.0     20.0 [illegible] [illegible] 7.00   54  [illegible]
91/06/27 1010                       30.0     20.0     7.8  [illegible] 6.50      57       14
91/07/17 1238                       30.0     24.0     7.8  [illegible] 7.00      66  [illegible]
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RAYMONDSKILL CREEK AT RT 209 BRIDGE, PA RIVER MILE 246.9, 0.3
DRBC/NPS45

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM-FCBR /100ML	31673 FECSTREP MF KF AGAR /100ML
91/06/10	1145	26.0	19.0	8.7	92.6$	7.00	56	6	
91/06/20	1355	29.0	22.0	8.6	97.7$	7.00	59	24	
91/07/02	1400	20.0	19.5	8.7	92.6$	7.00	72	5	
91/07/10	1255	27.5	21.6	8.8	100.0$	7.00	73	1	
91/07/17	1353	33.0	23.5	8.7	100.0$	7.00	71	1	
91/07/24	1338	29.5	23.0	8.2	94.3$	7.00	74	13	
91/08/14	1355	28.0	21.9	9.0	102.3$	7.00	71	7	
91/08/21	1440	22.5	20.8	8.3	92.2$	7.00	66	30	

DINGMANS CREEK AT DEWA BOUNDARY - RIVER MILE 239.2, 3.5
DRBC/NPS421

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM-FCBR /100ML	31673 FECSTREP MF KF AGAR /100ML
91/06/10	1245	27.0	21.0	7.0	77.8$	8.20	51	43	
91/06/20	1035		21.0	8.1	90.0$	7.00	49	106	
91/06/27	1035	24.0	21.0	8.3	92.7$	6.50	70	37	
91/07/17	1210	29.0	21.3	7.1	78.9$	6.50	67	9	

DINGMANS CREEK AT ROUTE 209 BRIDGE, PA - RIVER MILE 239.2, 0.5
DRBC/NPS42

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM-FCBR /100ML	31673 FECSTREP MF KF AGAR /100ML
91/06/10	1225	27.0	18.0	8.8	92.6$	7.00	55	5	
91/06/20	1340	31.0	21.0	9.1	101.1$	7.00	60	66	
91/06/27	1340	27.0	19.0	9.0	94.7$		68	[illegible]	
91/07/02	1200	22.0	19.0	8.7	[illegible]	7.00	79	10	
91/07/10	1123	24.0	19.9	8.0	[illegible]	6.50	77	16	
91/07/24	1120	23.0	20.2	9.1	98.9$	6.50	78	232	
91/08/21	1215	21.0	18.8	8.4	89.1$	7.00	72	43	

HORNBECKS CREEK AT DEWA BOUNDARY, PA - RIVER MILE 236.4, 2.1
DRBC/NPS 411

DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM-FCBR /100ML	31673 FECSTREP MF KF AGAR /100ML
91/06/13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.50	[illegible]	[illegible]	[illegible]
91/06/20	1140	[illegible]	[illegible]	[illegible]	[illegible]	6.50	[illegible]	[illegible]	
91/06/27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		

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                                       00020     00010     00300     00301     00400     00094     31616     31673
  DATE   TIME                          AIR       WATER     DO        DO        PH        CNDUCTVY  FEC COLI  FEC STRP
  FROM    OF                           TEMP      TEMP                SATUR               AT 25C    MFM FCBR  MFM ENT
   TO    DAY                           CENT      CENT      MG/L      PERCENT   SU        MICROMHO  /100ML    /100ML

HORNBECKS CREEK AT RT 209 BRIDGE, PA - RIVER MILE [illegible], 0.4
DRBC/NPS41

91/06/13 1425                          22.0      17.0      9.7       100.0$    7.00      80        130
91/06/20 1110                          24.0      19.0      8.7        92.6$    7.00      90        [illegible]
91/06/27 1225                          28.0      22.0      9.0       102.3$    7.00      92        4


TOMS CREEK AT DEWA BOUNDARY, PA - RIVER MILE 230.4, 2.7
DRBC/NPS361

91/06/13 1335                          22.0      18.0      11.5      121.1$    7.00      50        17
91/06/20 1310                          31.0      19.0      9.1        96.8$    7.00      56        87
91/06/27 1205                          28.0      18.0      9.2        96.8$    7.00      54        [illegible]
91/07/17 1035                          22.0      20.0      8.1        88.0$    7.00      67        19


TOMS CREEK AT RT 209 BRIDGE, PA - RIVER MILE 230.4, 0.3
DRBC/NPS36

91/06/13 1317                          22.0      16.0      10.6      106.0$    7.00      49        6
91/06/20 1235                          19.0      17.0      9.3        95.5$    7.00      44        60
91/06/27 1130                          26.0      15.0      9.2        90.2$    7.00      50        7
91/07/17 0945                          22.0      17.0      9.0        92.8$    7.00      60        33


SAW CREEK 145 FT US OF DISCHARGE - SECT 1 (PA) - RIVER MILE 226.9, 3.54, 1.71
DRBC/NPS3421

91/09/16 1405                          27.0      19.0      [illegible] 91.7$  7.01      80        5


SAW CREEK 140 FT DS OF DISCHARGE - SECT 2 (PA) - RIVER MILE 226.9, 3.54, 1.66
DRBC/NPS3420

91/09/16 1351                          26.0      19.0      [illegible] [illegible] 6.80  87
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                                 00020     00010     00300     00301     00400     00095     31616     31679
 DATE    TIME                     AIR      WATER       DO        DO        PH     CNDUCTVY  FEC COLI  FEC STRP
 FROM     OF                      TEMP      TEMP               SATUR               AT 25C   MFM-FCBR  MF M-ENT
  TO     DAY                      CENT      CENT      MG/L    PERCENT      SU     MICROMHO   /100ML    /100ML
==================================================================================================

SAW CREEK NEAR CONFLUENCE WITH BUSHKILL CREEK, PA   RIVER MILE 226.9, 3.3, 0.1
DRBC/NPS342

91/06/13 1105                    21.0      16.0       8.9     93.0$      7.00        45        33
91/06/19 1030                    18.0      18.0       8.5     89.5$      6.50        66        18
91/06/26 1157                    28.0      19.0       9.1     96.8$      7.00        59        12
91/07/16 1200                    32.0      19.0       8.2     87.2$      7.00        90        12       120
91/07/30 1209                    24.0      18.5       8.9     93.7$      7.00        90        12


BUSHKILL CREEK AT DEWA BOUNDARY, PA - RIVER MILE 226.9, 3.2
DRBC/NPS341

91/06/13 1110                    18.0      18.0      10.1    109.5$      7.00        32        93
91/06/19 1100                    18.0      20.0       8.6     93.5$      6.50        43       194
91/06/26 1147                    28.0      22.0       9.1    103.4$      7.00        42         6
91/07/16 1210                    31.0      23.0       9.0    103.4$      7.00        47         3       142
91/07/30 1150                    24.0      21.0       9.5    105.6$      7.50        49         6


BUSHKILL CR 50 FT US OF DISCHARGE - SECT 1 (PA)   RIVER MILE 226.9, 2.27
DRBC/NPS332

91/09/18 1018                    21.0      18.0      10.1    106.3$      7.00        85         2


BUSHKILL CR 266 FT DS OF DISCHARGE - SECT 3B(PA) - RIVER MILE 226.9, 2.22
DRBC/NPS312

91/09/18 1007                    21.0      19.0  [illegible]  102.1$     7.00        87        11
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                               00020    00010    00300    00301    00400    00095    31616    [illegible]
 DATE   TIME                   AIR      WATER    DO       DO       PH       CNDUCTVY FEC COLI [illegible]
 FROM   OF                     TEMP     TEMP              SATUR             AT 25C   MFM-FCBR [illegible]
  TO    DAY                    CENT     CENT     MG/L     PERCENT  SU       MICROMHO /100ML   [illegible]
=====================================================================================

BUSHKILL CREEK AT RT 209 BRIDGE, PA   RIVER MILE 226.9, 0.[illegible]
DRBC/NPS33

91/06/13 1140                  19.0     18.0     11.0     115.8$   7.00     51       27
91/06/19 1147                  18.5     18.7     8.9      91.7$    7.00     46       100
91/06/26 1230                  25.0     21.0     8.9      98.9$    7.00     61       10
91/07/02 1125                  22.0     19.5     9.0      95.7$    7.00     70       33
91/07/10 1050                  21.0     18.9     8.8      93.6$    7.00     80       16
91/07/16 1135                  30.0     21.0     9.[illegible]  102.2$   7.00     80       8        90
91/07/24 1045                  23.0     22.1     8.3      94.3$    7.00     93       61
91/07/30 1240                  26.0     21.0     10.[illegible] 113.3$   7.50     89       27
91/08/14 1110                  25.0     20.5     9.3      101.1$   7.30     86       72
91/08/21 1130                  22.5     20.7     8.6      95.6$    7.00     65       904
91/09/05                                                                             2
91/09/18 0943                  23.0     19.0     9.3      98.9$    7.00     9[illegible]  1[illegible]


LITTLE BUSHKILL NEAR CONFLUENCE WITH BIG BUSHKILL CREEK, PA - RIVER MILE 226.9, 0.8, 0.1
DRBC/NPS34

91/06/13 1130                  19.0     15.0     10.4     102.0$   7.00     35       10
91/06/19 1130                  18.5     17.1     9.1      93.8$    6.50     54       200
91/06/26 1215                  24.0     20.0     8.9      96.7$    6.50     42       11
91/07/16 1145                  31.0     18.0     8.9      93.7$    7.00     41       8
91/07/30 1230                  25.5     18.0     8.7      91.6$    6.50     52       19
91/09/18 0916                  21.0     18.0     8.9      93.2$    7.00     47       25


FLATBROOK CREEK AT WALPACK CENTER BRIDGE, NJ - RIVER MILE [illegible], 7.2
DRBC/NPS321

91/06/20 1340                  30.5     20.7     9.[illegible]  10[illegible]$  8.00     130      64
91/06/28 1300                  31.0     [illegible] 10.[illegible] [illegible]$ 8.00     257
91/07/17 0955                  25.0     1[illegible] 8.[illegible] [illegible]$ 8.50   [illegible] 8[illegible] [illegible]
91/08/01 1255                  28.0     21.5     [illegible] [illegible]$ 8.00     141      6[illegible]
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                               00020    00010    00300    00301    00400    00095    31616    31673
 DATE   TIME                    AIR     WATER     DO       DO       PH    CNDUCTVY FEC COLI FEC STREP
 FROM    OF                    TEMP     TEMP              SATUR              AT 25C  MFM FCBR MF KFAGAR
  TO    DAY                    CENT     CENT     MG/L    PERCENT    SU    MICROMHO  /100ML   /100ML
====================================================================================================

FLATBROOK CREEK AT OLD MINE ROAD, NJ - RIVER MILE 224.3, 0.5
DRBC/NPS32

91/06/20 1310                  29.0     21.0     9.1     101.1$    8.00      181       23
91/06/28 1325                  33.0     24.5    10.9     128.2$    8.50      241
91/07/02 1245                  20.0     20.0     9.5     103.3$    8.50      273       25
91/07/10 1205                  25.0     21.1     9.5     105.6$    8.00      272       10
91/07/17 1015                  26.0     20.0     8.7      91.6$    8.50      259       16
91/07/24 1205                  27.0     24.0     9.1     107.1$    8.00      272       16
91/08/01 1155                  28.0     21.0     8.0      88.9$              271        8
91/08/14 1215                  26.0     21.2     9.1     101.1$    8.00      268        9
91/08/21 1310                  22.5     21.6     9.3     105.7$    8.00      260       10


SHAWNEE CREEK AT RESORT PARKING LOT, PA - RIVER MILE 214.4, 0.2
DRBC/NPS271

91/06/13 1020                  19.0     16.0     9.2      92.0$    8.50      200      340
91/06/19 0926                  17.0     18.0     8.3      87.4$    7.50      211     1600
91/06/26 1035                  19.0     19.9     8.5      92.4$    8.00      253      460
91/07/02 1040                  20.0     18.5     8.7      86.3$    8.00      254      604
91/07/10 1000                  21.0     18.0     8.4      88.4$    8.00      278      830
91/07/16 1045                  27.0     19.0     8.5      90.4$    8.00      241      184
91/07/24 1010                  21.4     21.0     8.6      95.6$    8.00      270      308
91/07/30 0915                  19.5     16.5     8.9      89.0$    8.00      275      140
91/08/14 1010                  20.0     19.0     8.0      85.1$    8.00      282      124
91/08/21 1030                  20.5     19.3     8.0      86.1$    8.00      270      128
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DATE FROM TO	TIME OF DAY	00020 AIR TEMP CENT	00010 WATER TEMP CENT	00300 DO MG/L	00301 DO SATUR PERCENT	00400 PH SU	00095 CNDUCTVY AT 25C MICROMHO	31616 FEC COLI MFM-FCBR /100ML	[illegible] FEC [illegible] /100ML

BRODHEAD CREEK AT RT 402 BRIDGE, PA   RIVER MILE 213.0, 0.9
DRBC/NPS27

DATE	TIME	AIR TEMP	WATER TEMP	DO	DO SATUR	PH	CNDUCTVY	FEC COLI	FEC
91/06/20	0945	24.0	19.6	8.6	93.6$	7.30	123	80	
91/06/27	0915	22.0	28.0	8.4	106.8$	7.50	143	50	
91/07/02	1005	19.0	20.0	8.0	87.0$	7.50	150	120	
91/07/10	0930	18.0	19.5	8.2	87.2$	7.50	167	50	
91/07/17	1216	31.0	23.0	9.6	110.3$	9.00	166	30	41
91/07/24	0950	19.5	22.4	7.9	89.8$	7.50	170	100	
91/08/01	0920	21.0	20.9	6.6	73.3$	7.50	192	120	
91/08/14	0950	21.0	20.8	7.2	80.0$	7.50	187	40	
91/08/21	1000	20.0	20.0	7.8	84.8$	7.50	165	90	
91/08/27	1110		20.8	9.7	107.8$	8.50	157		
91/09/16	1300	31.5	22.0	9.3	105.7$	8.30	170	8	

MARSHALLS CREEK IN MINISINK HILLS AT BRIDGE, PA - RIVER MILE 213.0, 0.7, 0.2
DRBC/NPS28

DATE	TIME	AIR TEMP	WATER TEMP	DO	DO SATUR	PH	CNDUCTVY	FEC COLI	FEC
91/06/19	0824	16.5	18.7	8.5	90.4$	7.50	167	100	
91/06/26	0950	22.5	18.4	8.4	88.4$	7.50	161	33	
91/07/16	1100	26.0	19.0	8.9	91.7$	8.00	180	37	
91/08/01	0850	19.5	17.5	8.2	84.5$	7.50	196	30	

CHERRY CREEK NEAR RT 80 BRIDGE, RIVER MILE 212.6, 0.[illegible]
DRBC/NPS26

DATE	TIME	AIR TEMP	WATER TEMP	DO	DO SATUR	PH	CNDUCTVY	FEC COLI	FEC
91/06/20	1010	24.0	18.4	[illegible]	[illegible]$	7.30	194	11	
91/06/27	1040	22.0	20.0	[illegible]	104.0$	8.00	173	30	
91/07/02	0945	19.0	19.0	8.4	88.[illegible]$	8.00	174	29	
91/07/10	0910	19.0	17.9	[illegible]	86.[illegible]$	7.50	[illegible]	180	
91/07/17	1200	31.0	21.0	[illegible]	[illegible]$	8.50	223	260	
91/07/24	0910	18.0	19.8	[illegible]	83.7$	8.00	262	100	
91/08/01	0945	22.0	19.1	[illegible]	96.[illegible]$	8.00	290	140	
91/08/14	0920	21.0	19.[illegible]	[illegible]	87.1$	7.50	[illegible]	100	
91/08/21	0930	19.[illegible]	16.[illegible]	[illegible]	[illegible]$	7.[illegible]0	[illegible]	[illegible]	

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                                 00020    00010    00300    00301    00400    00095    31616    31673
  DATE   TIME                     AIR     WATER     DO       DO       PH     CNDUCTVY FEC COLI FECSTREP
  FROM    OF                     TEMP     TEMP              SATUR             AT 25C  MFM-FCBR MF M-ENT
   TO    DAY                     CENT     CENT     MG/L    PERCENT    SU     MICROMHO  /100ML   /100ML
------------------------------------------------------------------------------------------------------

DUNFIELD CREEK AT FOOT BRIDGE, NJ - RIVER MILE 211.4, 1.1
DRBC/NPS05

91/09/16 1135                    24.0     17.0      8.8     91.8$     6.50      30       11

SLATEFORD CREEK JUST OFF RT. 611, PA - RIVER MILE 209.5, 0.2
DRBC/NPS001

91/09/16 1056                    20.0     16.0      8.7     87.0$     8.00     156        2
91/09/26 1100                    14.0     14.0      9.6     92.3$     7.50     168

SLATEFORD CREEK AT DEWA BOUNDARY, PA - RIVER MILE 209.5, 1.0
DRBC/NPS002

91/09/26 1010                    14.0     14.0      9.0     86.5$     7.00     101
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APPENDIX D

TRIBUTARY MODELING DATA

NUTRIENTS AS N AND P (in mg/l)
** 2-SAMPLE COMPOSITES **

Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
Equinunk Creek (mouth)	7/02/91	0.110	<0.010	0.123	0.016	<0.010	<0.010
R.M. 322.50	7/09/91	<0.100	0.016	0.190	0.017	<0.010	<0.010
	7/24/91	0.240	<0.010	0.161	0.010	<0.010	<0.010
	8/21/91	2.200	<0.010	0.574	0.364	0.354	0.148
	8/28/91	0.100	<0.010	0.104	0.015	<0.010	<0.010
Callicoon Creek (mouth)	7/02/91	<0.100	<0.010	0.646	0.042	0.031	0.031
R.M. 303.60	7/09/91	0.140	0.032	0.679	0.055	0.026	0.026
	7/24/91	0.200	0.051	0.658	0.046	0.023	0.022
	8/21/91	<0.100	<0.010	0.698	0.075	0.044	0.042
	8/28/91	0.250	<0.039	0.438	0.042	0.021	0.021
Calkins Creek (mouth)	7/02/91	<0.100	<0.010	0.208	0.030	0.030	0.022
R.M. 295.60	7/09/91	<0.100	<0.010	0.234	0.040	0.023	0.017
	7/24/91	1.500	<0.010	0.202	0.038	0.028	0.026
	8/21/91	0.150	<0.010	0.284	0.131	0.053	0.044
	8/28/91	0.240	<0.010	0.144	0.034	0.024	0.024
Tenmile River (mouth)	7/03/91	<0.100	<0.010	0.233	0.029	0.012	0.012
R.M. 284.20	7/10/91	<0.100	<0.010	0.199	0.034	0.016	0.016
	7/25/91	0.190	<0.010	0.995	0.048	<0.010	<0.010
	8/21/91	<0.100	<0.010	0.436	0.076	0.024	0.024
	8/22/91	0.420	<0.010	0.352	0.041	0.015	0.014
	8/28/91	0.130	<0.010	0.021	0.018	<0.010	<0.010
	8/29/91	0.110	<0.010	0.061	0.018	<0.010	<0.010
Masthope Creek (mouth)	7/03/91	0.130	<0.010	0.122	0.062	0.013	0.013
R.M. 282.50	7/10/91	0.140	<0.010	0.125	0.029	0.015	0.015
	7/25/91	<0.100	<0.010	0.052	0.023	0.012	0.012
	8/22/91	0.350	<0.010	0.076	0.019	0.012	0.011
	8/29/91	0.340	<0.010	0.053	0.019	<0.010	<0.010
Lackawaxen River (mouth)	7/03/91	0.140	<0.010	0.097	0.034	0.013	0.013
R.M. 277.70	7/10/91	0.280	<0.010	0.072	0.037	0.016	0.016
	7/25/91	0.560	<0.010	0.023	0.027	<0.010	<0.010
	8/22/91	0.420	<0.010	0.185	0.024	<0.010	<0.010
	8/29/91	0.370	<0.010	<0.050	<0.032	0.014	0.012

NUTRIENTS AS N AND P (in mg/l)
** 2-SAMPLE COMPOSITES **

Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
Beaver Brook (mouth)	7/03/91	0.160	<0.010	0.222	0.092	<0.010	<0.010
R.M. 275.50	7/10/91	0.130	<0.010	0.206	0.040	0.010	0.010
	7/25/91	0.480	<0.010	0.191	0.019	<0.010	<0.010
	8/22/91	0.290	0.012	0.106	0.020	<0.010	<0.010
	8/29/91	0.190	<0.010	0.078	0.016	<0.010	<0.010
Halfway Brook (mouth)	7/03/91	0.310	<0.010	0.259	0.024	<0.010	<0.010
R.M. 273.40	7/10/91	<0.100	<0.010	0.230	0.034	0.013	0.013
	7/25/91	0.480	<0.010	0.254	0.023	0.012	0.012
	8/22/91	0.390	0.029	0.290	0.027	<0.010	<0.010
	8/29/91	0.300	<0.010	0.254	0.019	<0.010	<0.010
Shohola Creek (mouth)	7/03/91	0.200	<0.010	0.154	0.042	<0.010	<0.010
R.M. 273.20	7/10/91	0.120	0.016	0.089	0.038	<0.010	<0.010
	7/25/91	0.540	<0.010	0.074	0.019	<0.010	<0.010
	8/22/91	0.390	0.015	0.076	0.021	<0.010	<0.010
	8/29/91	0.290	<0.010	<0.050	0.015	<0.010	<0.010
Mongaup River (mouth)	7/03/91	0.530	<0.010	0.234	0.024	<0.010	<0.010
R.M. 261.10	7/10/91	0.300	<0.010	0.181	0.024	<0.010	<0.010
	8/22/91	0.340	0.021	0.131	0.012	<0.010	<0.010
	8/29/91	0.180	<0.010	0.168	0.016	<0.010	<0.010

NUTRIENTS AS N AND P (in mg/l)
** 2-SAMPLE COMPOSITES **

Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
Neversink River (mouth)	7/01/91	<0.100	0.310	0.481	0.083	0.072	0.065
R.M. 253.60	7/09/91	<0.100	0.036	0.397	0.114	0.105	0.092
	7/23/91	0.120	<0.010	0.483	0.155	0.096	0.095
	8/13/91	0.420	0.034	1.040	<0.010	<0.010	<0.010
	8/22/91	0.520	0.076	0.724	0.164	0.123	0.118
Neversink River (approx. 100' above discharge) R.M. 253.60	8/22/91	0.460	0.036	0.613	0.094	0.078	0.072
Neversink River (approx. 300' below discharge) R.M. 253.60	8/22/91	0.640	0.344	1.370	0.508	0.432	0.405
Cummins Creek	7/01/91	0.120	<0.010	0.272	0.089	0.015	0.015
(DWGNRA boundary and mouth)	7/09/91	0.330	<0.010	0.264	0.027	0.011	0.011
R.M. 250.10	7/23/91	0.120	<0.010	0.286	0.025	0.017	0.017
	8/12/91	0.420	<0.010	0.245	0.026	0.016	0.015
	8/22/91	0.170	0.013	0.166	0.022	0.015	0.015
Vandermark Creek	7/01/91	0.110	<0.010	1.480	0.094	0.018	0.018
(DWGNRA boundary and mouth)	7/09/91	1.180	<0.010	1.510	0.037	0.016	0.014
R.M. 247.30	7/23/91	<0.100	<0.010	1.610	0.026	0.016	0.016
	8/12/91	0.130	<0.010	1.790	0.018	0.018	0.018
	8/13/91	0.210	<0.010	1.860	0.021	0.017	0.017
	8/22/91	0.420	0.013	0.952	0.049	0.021	0.020
Sawkill Creek	7/01/91	0.190	<0.010	0.467	0.025	0.014	0.014
(DWGNRA boundary and mouth)	7/09/91	1.390	<0.010	0.546	0.039	0.013	<0.010
R.M. 247.00	7/23/91	<0.100	<0.010	0.524	0.028	0.017	0.017
	8/12/91	<0.100	<0.010	0.535	0.016	0.015	0.015
	8/13/91	0.420	<0.010	0.549	0.022	0.018	0.018
	8/22/91	0.570	0.015	0.406	0.066	0.016	0.016
Shimers Brook (DWGNRA boundary) R.M. 246.60	8/22/91	0.720	0.019	0.186	0.023	0.012	0.011
White Creek (Old Mine Road Bridge) R.M. 245.80	8/22/91	0.120	0.019	0.717	<0.010	<0.010	<0.010
Raymondskill Creek (mouth)	7/02/91	<0.100	<0.010	0.226	0.020	<0.010	<0.010
R.M. 243.9	7/10/91	<0.100	0.012	0.385	0.026	<0.010	<0.010
	7/24/91	<0.100	<0.010	0.133	0.016	0.010	0.010
	8/14/91	0.530	<0.010	0.012	0.012	<0.010	<0.010
	8/21/91	0.420	<0.010	0.230	0.017	<0.010	<0.010
Dingmans Creek (mouth)	7/02/91	<0.100	<0.010	0.508	0.043	0.013	0.013
R.M. 239.20	7/10/91	0.530	<0.010	0.343	0.027	0.010	0.010
	7/24/91	<0.100	0.011	0.665	0.089	0.014	0.014
	8/21/91	<0.100	<0.010	0.203	0.013	0.011	<0.010

NUTRIENTS AS N AND P (in mg/l)
** 2-SAMPLE COMPOSITES **

Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
Bushkill Creek (Rt 209 Bridge) R.M. 226.90	7/02/91	<0.100	<0.010	0.176	0.077	0.054	0.054
	7/10/91	0.380	0.011	0.170	0.051	0.043	0.043
	7/24/91	0.150	<0.010	0.414	0.148	0.086	0.083
	8/14/91	0.610	<0.010	0.196	0.086	0.070	0.066
	8/21/91	<0.100	<0.010	0.198	0.082	0.064	0.063
	9/18/91	0.350	<0.010	0.416	0.165	0.165	0.158
Little Bushkill Creek (mouth) R.M. 226.90	9/18/91	0.300	<0.010	0.061	0.019	0.012	0.011
Bushkill Creek (Sect 1 above discharge) R.M. 226.90	9/18/91	0.250	<0.010	0.155	0.068	0.051	0.051
Bushkill Creek (Sect 3 below discharge) R.M. 226.90	9/18/91	0.410	<0.010	0.187	0.103	0.076	0.069
Saw Creek (Sect 1 above discharge) R.M. 226.90	9/16/91	0.390	<0.010	0.140	0.020	<0.010	<0.010
Saw Creek (Sect 2 below discharge) R.M. 226.90	9/16/91	0.300	0.063	0.203	0.156	0.055	0.055
Flat Brook (mouth) R.M. 225.30	7/02/91	<0.100	<0.010	<0.050	0.018	<0.010	<0.010
	7/10/91	0.220	<0.010	0.065	0.018	<0.010	<0.010
	7/24/91	0.121	<0.010	0.027	0.014	<0.010	<0.010
	8/14/91	0.160	<0.010	<0.050	<0.010	<0.010	<0.010
	8/21/91	<0.100	<0.010	0.168	<0.010	<0.010	<0.010
	8/21/91	0.190	<0.010	0.630	0.030	0.026	0.025
Shawnee Creek R.M. 214.40	7/02/91	<0.100	0.038	0.300	0.070	0.026	0.026
	7/10/91	0.130	<0.010	0.470	0.037	0.016	0.016
	7/24/91	0.024	<0.010	0.440	0.032	0.017	0.017
	8/14/91	0.160	<0.010	0.400	0.031	0.022	0.022
	8/21/91	0.190	<0.010	0.630	0.030	0.026	0.025
Brodhead Creek (DWGNRA boundary and mouth) R.M. 213.00	7/02/91	<0.100	0.012	0.557	0.086	0.077	0.076
	7/10/91	0.240	<0.010	0.794	0.120	0.107	0.099
	7/24/91	0.266	<0.010	0.732	0.284	0.171	0.152
	8/14/91	0.480	<0.010	0.792	0.280	0.206	0.201
	8/21/91	0.110	0.015	0.575	0.152	0.123	0.114
	8/27/91	0.230	0.016	0.486	0.123	0.096	0.086
	9/16/91	0.420	<0.010	0.827	0.176	0.110	0.099
Cherry Creek (DWGNRA boundary and mouth) R.M. 212.60	7/02/91	0.310	0.314	0.988	0.154	0.154	0.135
	7/10/91	0.450	0.215	1.080	0.423	0.423	0.423
	7/24/91	0.378	0.156	0.680	0.183	0.096	0.086
	8/14/91	0.760	0.296	1.150	0.203	0.182	0.178
	8/21/91	0.500	0.160	0.944	0.222	0.188	0.165
Dunnfield Creek (near mouth) R.M. 211.40	9/16/91	0.280	<0.010	0.241	<0.010	0.010	<0.010

NUTRIENTS AS N AND P (in mg/l)
** 2-SAMPLE COMPOSITES **

Location	Date	TKN	NH3+NH4	NO2+NO3	Total P	Ortho P	Dis Orth P
Slateford Creek (near mouth)	9/16/91	0.250	<0.010	0.381	0.019	0.010	<0.010
R.M. 209.50	9/26/91	0.55	0.112	0.136	0.052	<0.010	<0.010
Slateford Creek (DWGNRA boundary) R.M. 209.50	9/26/91	0.85	<0.010	0.260	0.023	<0.010	<0.010

Upper Delaware River Tributaries
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
Equinunk Creek (mouth) R.M. 322.50	7/02/91	<0.50	72
	7/09/91	0.96	24
	7/24/91	<0.30	58
	8/21/91	3.23	
	8/28/91	<0.30	14
Callicoon Creek (mouth) R.M. 303.60	7/02/91	<0.50	948
	7/09/91	1.12	196
	7/24/91	0.68	1600
	8/21/91	0.60	1600
	8/28/91	0.86	1600
Calkins Creek (mouth) R.M. 295.60	7/02/91	<0.50	48
	7/09/91	<0.50	22
	7/24/91	0.83	154
	8/21/91	4.32	218
	8/28/91	<0.30	14
Tenmile River (mouth) R.M. 284.20	7/03/91	<0.50	24
	7/10/91	<0.50	10
	7/25/91	2.64	10
	8/21/91	0.83	400
	8/22/91	0.63	
	8/28/91	0.31	1K
	8/29/91	<0.30	1K
Masthope Creek (mouth) R.M. 282.50	7/03/91	<0.50	30
	7/10/91	<0.50	18
	7/25/91	<0.30	8
	8/22/91	<0.30	22
	8/29/91	<0.30	16

Upper Delaware River Tributaries
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
Lackawaxen River (mouth) R.M. 277.70	7/03/91	<0.50	22
	7/10/91	<0.50	20
	7/25/91	0.76	12
	8/22/91	<0.30	8
	8/29/91	0.47	1K
Beaver Brook (mouth) R.M. 275.50	7/03/91	<0.50	22
	7/10/91	<0.50	10
	7/25/91	0.32	64
	8/22/91	<0.30	8
	8/29/91	<0.30	18
Halfway Brook (mouth) R.M. 273.40	7/03/91	<0.50	100
	7/10/91	<0.50	52
	7/25/91	0.35	20
	8/22/91	0.43	20
	8/29/91	0.66	8
Shohola Creek (mouth) R.M. 273.20	7/03/91	<0.50	12
	7/10/91	<0.50	12
	7/25/91	0.56	26
	8/22/91	0.52	24
	8/29/91	<0.30	10
Mongaup River (mouth) R.M. 261.10	7/03/91	<0.50	38
	7/10/91	<0.50	6
	8/22/91	<0.30	30
	8/29/91	0.57	4

Middle Delaware River Tributaries --
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100 ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
Neversink River (mouth) R.M. 253.60	7/01/91	<0.50	58
	7/09/91	0.78	28
	7/23/91	<0.30	50
	8/13/91	1.28	
	8/22/91	<0.30	48
Neversink River (approx. 100' above discharge) R.M. 253.60	8/22/91	<0.30	38
Neversink River (approx. 300' below discharge) R.M. 253.60	8/22/91	0.52	1K
Cummins Creek (DWGNRA boundary and mouth) R.M. 250.10	7/01/91	<0.50	15
	7/09/91	0.42	6
	7/23/91	0.74	6
	8/12/91	0.57	
	8/22/91	<0.30	47
Vandermark Creek (DWGNRA boundary and mouth) R.M. 247.30	7/01/91	<0.50	78
	7/09/91	2.10	66
	7/23/91	<0.30	138
	8/12/91	1.27	
	8/13/91	0.37	10
	8/22/91	<0.30	48
Sawkill Creek (DWGNRA boundary and mouth) R.M. 247.00	7/01/91	<0.50	24
	7/09/91	4.02	28
	7/23/91	<0.30	18
	8/12/91	0.67	
	8/13/91	<0.30	14
	8/22/91	<0.30	40
Shimers Brook (DWGNRA boundary) R.M. 246.60	8/22/91	<0.30	2

Middle Delaware River Tributaries --
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100 ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
White Creek (Old Mine Road Bridge) R.M. 245.80	8/22/91	<0.30	138
Dingmans Creek (mouth) R.M. 239.20	7/02/91	<0.50	10
	7/10/91	<0.50	16
	7/24/91	<0.30	232
	8/21/91	<0.30	48
Bushkill Creek (mouth) R.M. 226.90	7/02/91	<0.50	38
	7/10/91	<0.50	16
	7/24/91	0.46	61
	8/14/91	0.48	77
	8/21/91	0.47	904
	9/18/91	0.44	12
Little Bushkill Creek (mouth) R.M. 226.90	9/18/91	<0.30	25
Bushkill Creek (Sect 1 above discharge) R.M. 226.90	9/18/91	0.32	1K
Bushkill Creek (Sect 3 below discharge) R.M. 226.90	9/18/91	0.54	12
Saw Creek (Sect 1 above discharge) R.M. 226.90	9/16/91	<0.30	6
Saw Creek (Sect 2 below discharge) R.M. 226.90	9/16/91	1.80	
Flat Brook (mouth) R.M. 225.30	7/02/91	<0.50	25
	7/10/91	<0.50	10
	7/24/91	0.84	16
	8/14/91	0.55	9
	8/21/91	0.38	10

Middle Delaware River Tributaries --
BODs (mg/l) (Unseeded & Uninhibited) and Fecal Coliform (Colonies/100 ml)
2-Grab-Sample Composites, Sampled in 1991

Location	Date	BOD5	Fecal Coliform
Shawnee Creek (DWGNRA boundary and mouth) R.M. 214.4	7/02/91	<0.50	604
	7/10/91	2.96	380
	7/24/91	<0.30	308
	8/14/91	<0.30	124
	8/21/91	<0.30	124
Brodhead Creek (DWGNRA boundary and mouth) R.M. 213.00	7/02/91	<0.50	120
	7/10/91	<0.50	50
	7/24/91	0.98	100
	8/14/91	1.86	40
	8/21/91	1.13	90
	8/27/91	1.24	
	9/16/91	1.82	1K
Cherry Creek (DWGNRA boundary and mouth) R.M. 212.60	7/02/91	<0.50	292
	7/10/91	<0.50	184
	7/24/91	<0.30	100
	8/14/91	0.46	100
	8/21/91	1.08	95
Dunfield Creek (near mouth) R.M. 211.40	9/16/91	<0.30	19
Slateford Creek (near mouth) R.M. 209.50	9/16/91	<0.30	2
	9/26/91	1.89	
Slateford Creek (DWGNRA boundary) R.M. 209.50	9/26/91	<0.3	

Tributary Total Phosphorus (mg/l)					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
322.50	5	0.0844	0.1398	0.010	0.364
303.60	5	0.0520	0.0187	0.042	0.075
295.60	5	0.0546	0.0384	0.030	0.131
284.20	7	0.0377	0.0187	0.018	0.076
282.50	5	0.0408	0.0162	0.019	0.062
277.70	5	0.0408	0.0047	0.024	0.037
275.50	5	0.0374	0.0286	0.016	0.092
273.40	5	0.0254	0.0050	0.019	0.034
273.20	5	0.0277	0.0109	0.018	0.042
261.10	4	0.0190	0.0052	0.012	0.024
253.60	5	0.1052	0.0558	0.010	0.164
250.10	5	0.0378	0.0257	0.022	0.089
247.80	5	0.0408	0.0280	0.018	0.094
247.00	6	0.0327	0.0164	0.016	0.066
243.90	5	0.0190	0.0053	0.012	0.024
239.20	4	0.0480	0.0286	0.013	0.089
226.90	5	0.0888	0.0386	0.051	0.148
225.30	5	0.0140	0.0036	0.010	0.018
214.40	5	0.0400	0.0169	0.030	0.070
213.00	5	0.1742	0.0786	0.086	0.284
212.60	5	0.2370	0.0957	0.154	0.423

Tributary Total Nitrogen (mg/l)					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
322.50	5	0.7804	0.9991	0.204	2.774
303.60	5	0.7818	0.0592	0.688	0.858
295.60	5	0.6324	0.5365	0.308	1.702
284.20	7	0.4924	0.3469	0.151	1.185
282.50	5	0.2976	0.0999	0.152	0.426
277.70	5	0.4394	0.1393	0.237	0.605
275.50	5	0.4106	0.1377	0.268	0.671
273.40	5	0.5734	0.1391	0.330	0.734
273.20	5	0.3966	0.1359	0.209	0.614
261.10	4	0.5160	0.1525	0.348	0.764
253.60	5	0.8770	0.3954	0.497	1.460
250.10	5	0.4786	0.1274	0.336	0.665
247.30	6	1.8920	0.4211	1.372	2.690
247.00	6	0.9662	0.4588	0.624	1.936
243.90	5	0.4314	0.1977	0.158	0.650
239.20	4	0.6373	0.2148	0.303	0.873
226.90	6	0.5433	0.2044	0.276	0.806
225.30	5	0.2122	0.0573	0.148	0.285
214.40	5	0.5882	0.1350	0.399	0.820
213.00	7	0.9441	0.2426	0.657	1.272
212.60	5	1.4480	0.2810	1.058	1.910

Tributary TKN Nitrogen (mg/l)					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
322.50	6	0.5500	0.8267	0.100	2.200
303.60	5	0.1580	0.0588	0.100	0.250
295.60	5	0.4180	0.5434	0.100	1.500
284.20	7	0.1643	0.1086	0.100	0.420
282.50	5	0.2120	0.1094	0.100	0.350
277.70	5	0.3540	0.1402	0.100	0.560
275.50	5	0.2520	0.1270	0.130	0.480
273.40	5	0.3160	0.1809	0.100	0.480
273.20	6	0.3080	0.1094	0.120	0.540
261.10	4	0.2075	0.1809	0.180	0.530
253.60	5	0.2520	0.1809	0.100	0.520
250.10	5	0.2320	0.1216	0.130	0.420
247.30	6	0.3583	0.3833	0.100	1.180
247.00	5	0.4617	0.4492	0.100	1.390
243.90	5	0.3200	0.1086	0.100	0.530
239.20	4	0.2075	0.1862	0.100	0.530
226.90	6	0.2817	0.1851	0.100	0.610
225.30	5	0.1402	0.0455	0.100	0.220
213.00	5	0.1408	0.0312	0.100	0.190
213.00	7	0.2520	0.1327	0.100	0.480
212.60	5	0.4796	0.1543	0.310	0.760

Tributary NO2+NO3 Nitrogen (mg/l)					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
322.50	5	0.2304	0.1744	0.144	0.574
303.60	5	0.6238	0.0946	0.438	0.698
295.60	5	0.2144	0.0456	0.144	0.284
284.20	4	0.3281	0.3043	0.021	0.995
282.50	5	0.0856	0.0321	0.052	0.185
277.70	5	0.0854	0.0555	0.023	0.185
275.50	5	0.1606	0.0575	0.078	0.222
273.40	5	0.2574	0.0192	0.233	0.290
273.20	5	0.0886	0.0350	0.050	0.168
261.10	4	0.1785	0.0369	0.131	0.234
253.60	5	0.6250	0.2345	0.397	1.040
250.10	5	0.2466	0.0424	0.166	0.286
247.30	5	1.5337	0.2943	0.952	1.860
247.00	5	0.5045	0.0518	0.406	0.549
243.90	5	0.1114	0.0655	0.056	0.234
239.20	4	0.4298	0.1735	0.203	0.665
225.30	6	0.2617	0.1089	0.170	0.416
225.30	5	0.0720	0.0495	0.027	0.168
214.40	5	0.4474	0.1080	0.299	0.630
213.00	4	0.6804	0.1274	0.486	0.827
212.60	5	0.9684	0.1610	0.680	1.150

Tributary NH3+NH4 Nitrogen (mg/l)

River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
322.50	5	0.0112	0.0024	0.010	0.016
303.60	5	0.0284	0.0162	0.010	0.051
295.60	5	0.0100	0.0000	0.010	0.010
284.20	4	0.0100	0.0000	0.010	0.010
282.50	5	0.0100	0.0000	0.010	0.016
277.70	5	0.0120	0.0000	0.010	0.010
275.50	5	0.010[illegible]	0.0048	0.010	0.01[illegible]
273.40	5	0.0122	0.0076	0.010	0.029
273.20	5	0.0122	0.0027	0.010	0.016
261.10	4	0.0128	0.0048	0.010	0.021
253.60	5	0.0932	0.1105	0.010	0.310
250.10	5	0.0106	0.0012	0.010	0.013
247.30	6	0.0105	0.0011	0.010	0.013
247.00	6	0.0108	0.0019	0.010	0.015
243.90	5	0.0100	0.0000	0.010	0.010
239.20	4	0.0103	0.0004	0.010	0.011
226.90	6	0.0102	0.0004	0.010	0.011
225.30	5	0.0100	0.0000	0.010	0.010
214.40	5	0.0156	0.0112	0.010	0.038
213.00	7	0.0119	0.0024	0.010	0.016
212.60	5	0.2282	0.0663	0.156	0.314

Tributary BOD5 (mg/l)					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
322.50	5	1.0580	1.1124	0.300	3.230
303.60	5	0.8120	0.2096	0.500	1.120
295.60	5	1.2900	1.5245	0.300	4.320
284.20	7	0.8157	0.7638	0.300	2.640
282.50	5	0.3800	0.0980	0.300	0.500
277.70	5	0.5060	0.1472	0.300	0.760
275.50	5	0.3840	0.0950	0.300	0.500
273.40	5	0.4880	0.1023	0.350	0.660
273.20	5	0.4760	0.0907	0.300	0.560
261.10	4	0.4675	0.1008	0.300	0.570
253.60	5	0.6320	0.3687	0.300	1.280
250.10	5	0.5060	0.1475	0.300	0.740
247.30	6	0.8067	0.6690	0.300	2.100
247.00	6	1.0150	1.3508	0.300	4.020
243.90	5	0.3800	0.0980	0.300	0.500
239.20	4	0.4000	0.1000	0.300	0.500
226.90	6	0.4750	0.0214	0.440	0.500
225.30	5	0.5540	0.1536	0.380	0.840
214.40	5	0.8720	1.0469	0.300	2.960
213.00	7	1.1614	0.5327	0.500	1.960
212.60	5	0.5680	0.2664	0.300	1.080

Tributary Fecal Coliform (No./100 ml)					
River Mile	n	Arithmetic Average	Standard Deviation	Minimum	Maximum
322.50	4	42.00	23.79	14	72
303.60	5	1188.80	556.94	196	1600
295.60	5	91.20	80.79	14	218
284.20	6	74.33	145.85	1	400
282.50	5	18.80	7.22	8	30
277.70	5	12.60	7.74	1	22
275.50	5	24.40	20.45	8	64
273.40	5	40.00	33.37	8	100
273.20	5	16.80	6.76	10	26
261.10	4	19.50	14.79	4	38
253.60	4	46.00	11.05	28	58
250.10	4	29.25	19.03	6	49
247.30	5	68.00	41.88	10	138
247.00	5	24.80	9.00	14	40
243.90	5	12.20	10.53	1	30
239.20	4	76.50	90.93	10	232
226.90	6	184.67	322.52	12	904
225.30	5	14.00	6.03	9	25
214.40	5	308.80	178.36	124	604
213.00	6	66.83	40.42	1	120
212.60	5	274.20	224.60	95	700

APPENDIX E

BEAVER BROOK DATA

PROSSER LABORATORIES

P.O. BOX 118
EFFORT, PA 18330-0118
PHONE: (717) 629-2981
FAX: (717) 620-0695

Located at State Rd. and Rt. 115

GEORGE W. PROSSER JR.
DAVID C. SCHOLTZ

PA DER Lab # 45-289
PA Radon Lab # 809
EPA and PA Dept.
of Agriculture Approved

DELAWARE WATER GAP NATIONAL RECREATION AREA
ATTN: DEBBIE DRELICH
BUSHKILL, PA 18324

11/19/91

ANALYTICAL REPORT

Sample # : 48367
Date Sampled : 10/24/91
Time Sampled : ----
Sampled By : Client
Type of Sample : Sediment / Water Mixture
Location : Campsite #1
Date Received : 10/25/91

TEST PERFORMED	RESULT(S)*
Petroleum Hydrocarbons	1.2
Antimony	ND <.010
Arsenic	.224
Beryllium	.0237
Cadmium	.00934
Chromium	ND <.025
Copper	.295
Lead	.442
Mercury	ND <.0050
Nickel	.540
Selenium	ND <.020
Silver	ND <.010
Thallium	ND <.010
Zinc	3.28

ND or < indicates none detected.
*All results are expressed in mg/l unless stated otherwise.

AUTHORIZED SIGNATURE

DELAWARE WATER GAP NATIONAL RECREATION AREA

Sample #48367

VOLATILE COMPOUNDS	RESULT ppb
Acrolein	ND <10.0
Acrylonitrile	ND <10.0
Benzene	ND <1.0
Bromodichloromethane	ND <1.0
Bromoform	ND <1.0
Bromomethane	ND <1.0
Carbon tetrachloride	ND <1.0
Chlorobenzene	ND <1.0
Chloroethane	ND <1.0
2-Chloroethylvinyl ether	ND <1.0
Chloroform	ND <1.0
Chloromethane	ND <1.0
Dibromochloromethane	ND <1.0
1,1-Dichloroethane	ND <1.0
1,2-Dichloroethane	ND <1.0
1,1-Dichloroethene	ND <1.0
trans-1,2-Dichloroethene	ND <1.0
1,2-Dichloropropane	ND <1.0
cis-1,3-Dichloropropene	ND <1.0
trans-1,3-Dichloropropene	ND <1.0
Ethylbenzene	ND <1.0
Methylene Chloride	ND <1.0
1,1,2,2-Tetrachloroethane	ND <1.0
Tetrachloroethene	ND <1.0
Toluene	ND <1.0
1,1,1-Trichloroethane	ND <1.0
1,1,2-Trichloroethane	ND <1.0
Trichloroethylene	ND <1.0
Trichlorofluoromethane	ND <1.0
Vinyl chloride	ND <1.0
1,4-Dichlorobenzene	ND <1.0
1,2-Dichlorobenzene	ND <1.0
1,3-Dichlorobenzene	ND <1.0

ND or < indicates none detected.

AUTHORIZED SIGNATURE

PROSSER LABORATORIES

P.O. BOX 118
EFFORT, PA 18330-0118
PHONE: (717) 629-2981
FAX: (717) 620-0695

Located at State Rd. and Rt. 115

GEORGE W. PROSSER JR.
DAVID C. SCHOLTZ

PA DER Lab # 45-289
PA Radon Lab # 809
EPA and PA Dept.
of Agriculture Approved

DELAWARE WATER GAP NATIONAL RECREATION AREA
ATTN: DEBBIE DRELICH
BUSHKILL, PA 18324

11/19/91

ANALYTICAL REPORT

Sample #	: 48368
Date Sampled	: 10/24/91
Time Sampled	: ----
Sampled By	: Client
Type of Sample	: Sediment / Water Mixture
Location	: Campsite #2
Date Received	: 10/25/91

TEST PERFORMED	RESULT(S)*
Petroleum Hydrocarbons	2.2
Antimony	ND <.010
Arsenic	.225
Beryllium	.0378
Cadmium	.0258
Chromium	ND <.025
Copper	.505
Lead	.983
Mercury	ND <.0050
Nickel	.500
Selenium	ND <.020
Silver	ND <.010
Thallium	ND <.010
Zinc	5.35

ND or < indicates none detected.
*All results are expressed in mg/l unless stated otherwise.

AUTHORIZED SIGNATURE

DELAWARE WATER GAP NATIONAL RECREATION AREA

Sample #48368

VOLATILE COMPOUNDS	RESULT ppb
Acrolein	ND <10.0
Acrylonitrile	ND <10.0
Benzene	ND <1.0
Bromodichloromethane	ND <1.0
Bromoform	ND <1.0
Bromomethane	ND <1.0
Carbon tetrachloride	ND <1.0
Chlorobenzene	ND <1.0
Chloroethane	ND <1.0
2-Chloroethylvinyl ether	ND <1.0
Chloroform	ND <1.0
Chloromethane	ND <1.0
Dibromochloromethane	ND <1.0
1,1-Dichloroethane	ND <1.0
1,2-Dichloroethane	ND <1.0
1,1-Dichloroethene	ND <1.0
trans-1,2-Dichloroethene	ND <1.0
1,2-Dichloropropane	ND <1.0
cis-1,3-Dichloropropene	ND <1.0
trans-1,3-Dichloropropene	ND <1.0
Ethylbenzene	ND <1.0
Methylene Chloride	ND <1.0
1,1,2,2-Tetrachloroethane	ND <1.0
Tetrachloroethene	ND <1.0
Toluene	ND <1.0
1,1,1-Trichloroethane	ND <1.0
1,1,2-Trichloroethane	ND <1.0
Trichloroethylene	ND <1.0
Trichlorofluoromethane	ND <1.0
Vinyl chloride	ND <1.0
1,4-Dichlorobenzene	ND <1.0
1,2-Dichlorobenzene	ND <1.0
1,3-Dichlorobenzene	ND <1.0

ND or < indicates none detected.

AUTHORIZED SIGNATURE

PROSSER LABORATORIES

P.O. BOX 118
EFFORT, PA 18330-0118
PHONE: (717) 629-2981
FAX: (717) 620-0695

Located at State Rd. and Rt. 115

GEORGE W. PROSSER, JR.
DAVID C. SCHOLTZ

PA DER Lab # 45-289
PA Radon Lab # 809
EPA and PA Dept.
of Agriculture Approved

DELAWARE WATER GAP NATIONAL RECREATION AREA
ATTN: DEBBIE DRELICH
BUSHKILL, PA 18324

11/19/91

Site located at Route 97 Bridge

ANALYTICAL REPORT

Sample # : 48369
Date Sampled : 10/24/91
Time Sampled : ----
Sampled By : Client
Type of Sample : Sediment / Water Mixture
Location : Campsite #3 ----- Site #4 on Fig. 4.
Date Received : 10/25/91

TEST PERFORMED	RESULT(S)*
Petroleum Hydrocarbons	1.4
Antimony	ND <.010
Arsenic	.153
Beryllium	.0166
Cadmium	.0104
Chromium	ND <.025
Copper	.205
Lead	.250
Mercury	ND <.0050
Nickel	ND <.150
Selenium	ND <.020
Silver	ND <.010
Thallium	ND <.010
Zinc	2.54

ND or < indicates none detected.
*All results are expressed in mg/l unless stated otherwise.

AUTHORIZED SIGNATURE

DELAWARE WATER GAP NATIONAL RECREATION AREA

Sample #48369

VOLATILE COMPOUNDS	RESULT ppb
Acrolein......................	ND <10.0
Acrylonitrile.................	ND <10.0
Benzene.......................	ND <1.0
Bromodichloromethane.........	ND <1.0
Bromoform.....................	ND <1.0
Bromomethane..................	ND <1.0
Carbon tetrachloride.........	ND <1.0
Chlorobenzene................	ND <1.0
Chloroethane.................	ND <1.0
2-Chloroethylvinyl ether.....	ND <1.0
Chloroform...................	ND <1.0
Chloromethane................	ND <1.0
Dibromochloromethane.........	ND <1.0
1,1-Dichloroethane...........	ND <1.0
1,2-Dichloroethane...........	ND <1.0
1,1-Dichloroethene...........	ND <1.0
trans-1,2-Dichloroethene.....	ND <1.0
1,2-Dichloropropane..........	ND <1.0
cis-1,3-Dichloropropene......	ND <1.0
trans-1,3-Dichloropropene....	ND <1.0
Ethylbenzene.................	ND <1.0
Methylene Chloride...........	ND <1.0
1,1,2,2-Tetrachloroethane....	ND <1.0
Tetrachloroethene............	ND <1.0
Toluene......................	ND <1.0
1,1,1-Trichloroethane........	ND <1.0
1,1,2-Trichloroethane........	ND <1.0
Trichloroethylene............	ND <1.0
Trichlorofluoromethane.......	ND <1.0
Vinyl chloride...............	ND <1.0
1,4-Dichlorobenzene..........	ND <1.0
1,2-Dichlorobenzene..........	ND <1.0
1,3-Dichlorobenzene..........	ND <1.0

ND or < indicates none detected.

AUTHORIZED SIGNATURE

PROSSER LABORATORIES

P.O. BOX 118
EFFORT, PA 18330-0118
PHONE: (717) 629-2981
FAX: (717) 620-0695

Located at State Rd. and Rt. 115

GEORGE W. PROSSER JR.
DAVID C. SCHOLTZ

PA DER Lab # 45-289
PA Radon Lab # 809
EPA and PA Dept
of Agriculture Approved

DELAWARE WATER GAP NATIONAL RECREATION AREA
ATTN: DEBBIE DRELICH
BUSHKILL, PA 18324

11/19/91

ANALYTICAL REPORT

Sample # : 48370
Date Sampled : 10/24/91
Time Sampled : ----
Sampled By : Client
Type of Sample : Sediment / Water Mixture
Location : Campsite #4 ------- Site #3 on Fig. 4.
Date Received : 10/25/91

TEST PERFORMED	RESULT(S)*
Petroleum Hydrocarbons	ND <.81
Antimony	ND <.010
Arsenic	.189
Beryllium	.0192
Cadmium	.0137
Chromium	ND <.025
Copper	.310
Lead	.453
Mercury	ND <.0050
Nickel	.150
Selenium	ND <.020
Silver	ND <.010
Thallium	ND <.010
Zinc	2.87

ND or < indicates none detected.
*All results are expressed in mg/l unless stated otherwise.

AUTHORIZED SIGNATURE

PROSSER LABORATORIES

P O. BOX 118
EFFORT, PA 18330-0118
PHONE: (717) 629-2981
FAX: (717) 620-0695

GEORGE W. PROSSER, JR
DAVID C. SCHOLTZ

Located at State Rd. and Rt. 115

PA DER Lab # 45-289
PA Radon Lab # 809
EPA and PA Dept.
of Agriculture Approved

DELAWARE WATER GAP NATIONAL RECREATION AREA

Sample #48370

VOLATILE COMPOUNDS	RESULT ppb
Acrolein	ND <10.0
Acrylonitrile	ND <10.0
Benzene	ND <1.0
Bromodichloromethane	ND <1.0
Bromoform	ND <1.0
Bromomethane	ND <1.0
Carbon tetrachloride	ND <1.0
Chlorobenzene	ND <1.0
Chloroethane	ND <1.0
2-Chloroethylvinyl ether	ND <1.0
Chloroform	ND <1.0
Chloromethane	ND <1.0
Dibromochloromethane	ND <1.0
1,1-Dichloroethane	ND <1.0
1,2-Dichloroethane	ND <1.0
1,1-Dichloroethene	ND <1.0
trans-1,2-Dichloroethene	ND <1.0
1,2-Dichloropropane	ND <1.0
cis-1,3-Dichloropropene	ND <1.0
trans-1,3-Dichloropropene	ND <1.0
Ethylbenzene	ND <1.0
Methylene Chloride	ND <1.0
1,1,2,2-Tetrachloroethane	ND <1.0
Tetrachloroethene	ND <1.0
Toluene	ND <1.0
1,1,1-Trichloroethane	ND <1.0
1,1,2-Trichloroethane	ND <1.0
Trichloroethylene	ND <1.0
Trichlorofluoromethane	ND <1.0
Vinyl chloride	ND <1.0
1,4-Dichlorobenzene	ND <1.0
1,2-Dichlorobenzene	ND <1.0
1,3-Dichlorobenzene	ND <1.0

ND or < indicates none detected.

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APPENDIX F

1991 PRECIPITATION DATA

	Daily Precipitation Data - 1991		
	Equinunk, PA	Matamoras, PA	Stroudsburg,PA
01-Jun	0.02	0.07	
02-Jun			
03-Jun			
04-Jun	0.20	0.55	0.23
05-Jun	T	0.06	0.04
06-Jun	0.02	0.03	T
07-Jun			
08-Jun			
09-Jun			
10-Jun			
11-Jun			0.11
12-Jun	0.27	0.14	0.34
13-Jun	0.25	0.34	0.07
14-Jun			
15-Jun			
16-Jun			0.09
17-Jun		T	
18-Jun	0.02		
19-Jun	0.02	0.64	1.75
20-Jun	T		
21-Jun			
22-Jun	T		0.41
23-Jun		0.64	0.24
24-Jun		T	
25-Jun			
26-Jun			
27-Jun			
28-Jun			
29-Jun			
30-Jun			0.21
Monthly Totals	0.80	2.47	3.49

Daily Precipitation Data - 1991			
	Equinunk, PA	Matamoras, PA	Stroudsburg, PA
01-Jul			
02-Jul			0.02
03-Jul	0.19	0.17	0.02
04-Jul	0.02		
05-Jul	0.02	T	0.23
06-Jul	0.24	0.05	0.03
07-Jul			0.23
08-Jul	T	T	
09-Jul			
10-Jul			
11-Jul			
12-Jul			
13-Jul	0.25	T	0.10
14-Jul	0.61	0.10	
15-Jul			
16-Jul			
17-Jul			
18-Jul			
19-Jul			
20-Jul	0.01	T	0.04
21-Jul			0.02
22-Jul	T	0.26	0.15
23-Jul	0.02	0.18	0.35
24-Jul	0.17	1.10	0.09
25-Jul			0.04
26-Jul	T	0.02	0.82
27-Jul	1.00	0.11	0.02
28-Jul			
29-Jul			T
30-Jul			0.01
31-Jul			
Monthly Totals	2.71	1.99	2.17

	Daily Precipitation Data - 1991		
	Equinunk, PA	Matamoras, PA	Stroudsburg, PA
01-Aug			
02-Aug			
03-Aug			
04-Aug	0.24	0.07	0.09
05-Aug	0.27		
06-Aug			
07-Aug			
08-Aug			
09-Aug	0.02		0.88
10-Aug	0.94	0.23	0.14
11-Aug	T		
12-Aug	T		
13-Aug			
14-Aug			
15-Aug	T	0.15	0.55
16-Aug		0.40	
17-Aug			
18-Aug			
19-Aug	0.27	0.93	2.02
20-Aug	0.04	0.90	0.38
21-Aug	0.57	0.06	0.03
22-Aug	0.10	0.04	
23-Aug			0.77
24-Aug			0.10
25-Aug			0.18
26-Aug			
27-Aug			
28-Aug			
29-Aug			
30-Aug			
31-Aug	T		T
Monthly Totals	2.51	2.78	5.14

Daily Precipitation Data - 1990			
	Equinunk, PA	Matamoras, PA	Stroudsburg, PA
01-Sep		T	
02-Sep			
03-Sep			
04-Sep			
05-Sep	0.24	0.38	0.22
06-Sep			
07-Sep			
08-Sep			
09-Sep			
10-Sep			0.09
11-Sep	0.05		
12-Sep			
13-Sep			
14-Sep			
15-Sep			
16-Sep	0.17	T	
17-Sep	T		
18-Sep	0.15		
19-Sep	1.52	1.65	0.45
20-Sep	0.32	0.38	0.08
21-Sep		T	
22-Sep			
23-Sep			0.05
24-Sep	0.10	T	T
25-Sep	0.53	1.09	1.60
26-Sep	0.05	0.58	0.22
27-Sep	0.01	T	
28-Sep			
29-Sep			
30-Sep			
Monthly Totals	3.14	4.08	2.71

T =	Trace, an amount too small to measure.
	Daily measurements are based on total precipitation as of 8:00 a.m. for each date listed.
Source:	National Oceanic and Atmospheric Administration.
	Climatological Data, Pennsylvania, May thru Sept. 1990.

APPENDIX G

SCENIC RIVERS PROTECTION POLICY

DELAWARE RIVER BASIN COMMISSION

Proposed Amendments to Comprehensive Plan, Water Code of the Delaware River Basin, Administrative Manual - Part III Water Quality Regulations and Administrative Manual - Rules of Practice and Procedure

AGENCY: Delaware River Basin Commission.

ACTION: Notice of proposed rulemaking and public hearings.

SUMMARY: Notice is hereby given that the Delaware River Basin Commission will hold public hearings in accordance with this notice to receive comments on proposed amendments to its Comprehensive Plan, Water Code, Water Quality Regulations and Rules of Practice and Procedure relating to water quality standards and policies to protect existing water quality in certain waters of the Basin. The proposal would also classify the Upper Delaware Scenic and Recreational River, the Delaware Water Gap National Recreation Area, and the Delaware River from Millrift, Pennsylvania to the northern boundary of the Delaware Water Gap National Recreation Area as Special Protection Waters.

The Commission will hold a workshop to describe the proposed regulations to the public so that they may offer informed testimony during the public hearing process. At the workshop, Commission staff will (a) present an overview of the proposed regulations, their structure, meaning and rationale; (b) describe how the regulations will likely be implemented for various types of project applicants; and (c) answer any questions from the audience. Comments and testimony from the public should be presented at the public hearings, rather than at the workshop.

DATES: The public hearings are scheduled as follows: May 5, 1992, and May 6, 1992 from 2:00 to 5:00 p.m., resuming at 7:00 p.m.

The Commission's workshop will be held on April 2, 1992 from 1:30 to 5:00 p.m.

ADDRESSES: The May 5, 1992 hearing will be held in the Ballroom of the Inn at Hunt's Landing, 900 Routes 6 & 209, Matamoras, Pennsylvania.

The May 6, 1992 hearing will be held in the Tusten Theater on Bridge Street (Route 52) in Narrowsburg, New York.

The April 2, 1992 workshop will be held at the Inn at Hunt's Landing, 900 Routes 6 & 209, Matamoras, Pennsylvania.

Written comments should be submitted to Susan M. Weisman, Delaware River Basin Commission, P. O. Box 7360, West Trenton, New Jersey 08628.

FOR FURTHER INFORMATION CONTACT: Susan M. Weisman, Commission Secretary, Delaware River Basin Commission, Telephone (609) 883-9500. Persons wishing to testify are requested to notify the Secretary in advance.

SUPPLEMENTARY INFORMATION:

BACKGROUND

Water quality standards and policies now in effect for the Delaware River between Hancock, New York and the Delaware Water Gap are based on the protection of designated uses for primary-contact recreation and aquatic life. However, these water quality standards and associated effluent and other policies do not specifically preserve the existing high level of water quality from degradation.

In 1988, the Commission and the National Park Service initiated the development of a water quality protection plan for the Middle Delaware Scenic and Recreational River and tributaries within the boundary of the National Recreation

Area. Prompting the need for the plan was the existing and planned rapid growth and development in the drainage area to the National Recreation Area and the potential decline in water quality within the National Recreation Area due to increased point and non-point source pollution in its drainage area.

In 1989, the Watershed Association of the Delaware River petitioned the Commission to classify the Delaware River from Hancock, New York to the Delaware Water Gap as an Outstanding National Resource Water, as described by U. S. Environmental Protection Agency anti-degradation regulations.

In response to the petition and other considerations, the Commission expanded the areal scope of the water quality protection planning effort to include the Upper Delaware Scenic and Recreational River corridor.

Commission reports describing issues and alternatives were disseminated in March 1990, October 1990 and April 1991. In November and December 1990, the Commission held a series of public briefings concerning possible scenic rivers protection alternatives.

The proposed changes to the Commission's regulations were developed with scientific and policy input from the Commission's Water Quality Advisory Committee. Participants in the Committee discussions included representatives from the environmental departments of Delaware, New Jersey, New York, Pennsylvania; U. S. Environmental Protection Agency Regions II and III; public members from the University of Rhode Island and the Academy of Natural Sciences; and the National Park Service. Members of the general public were observers at the various Committee meetings. Comments received on the various reports issued to the public during the planning process, comments received from the public briefings, and the inputs received through the Advisory Committee deliberations have led to the changes now being proposed.

The proposed revisions set forth an overall framework for providing special water quality protection measures for interstate and contiguous waters deemed by the Commission to have exceptionally high scenic, recreational, ecological or water supply values. The proposed changes then go an additional step by classifying certain stream reaches as Special Protection Waters, thus activating the provisions of the Special Protection Water policies in these reaches. The changes have been designed to be implementable, with the dual objective of protecting existing water quality without adversely impacting local growth and development prerogatives.

The proposed amendments define the goals of the water quality protection strategy, set forth point and non-point source pollution control policies and requirements and define the institutional structure within which the Commission, the state environmental agencies and others will share overall water quality management responsibilities. The proposal also classifies certain stream reaches as Special Protection Waters and includes numerical definitions of Existing Water Quality and the locations of monitoring points which will be used to manage water quality.

The Commission has prepared a "Basis and Background Document - Proposed Revisions to Water Quality Standards and Regulations - Hancock, New York to the Delaware Water Gap" describing the proposed amendments and their rationale in considerable depth. This and other relevant reports may be obtained by contacting Christopher M. Roberts at the Commission.

The subjects of the hearings will be as follows:

Amendments to the Comprehensive Plan, Water Code of the Delaware River Basis, Administrative Manual - Part III Water Quality Regulations, and Administrative Manual - Rules of Practice and Procedure Relating to Water Quality Standards and Policies.

Article 3 of the Water Code of the Delaware River Basin sets forth the water quality standards and guidelines for the Delaware River Basin. The Commission's Administrative Manual - Part III Water Quality Regulations, apply to all waste dischargers, public and private, using the waters of the Delaware River Basin. It is proposed to:

1. Amend Article 1 of the Administrative Manual - Part III, Water Quality Regulations by the addition of new subsection 1.20.10 to read as follows:

1.20.10 "Special Protection Waters" are waters classified as either Outstanding Basin Waters or Significant Resource Waters by the Commission (see 3.10.3 of Article 3).

2. Amend Article 2 of the Administrative Manual - Part III, Water Quality Regulations as follows:

a. Section 2.20 is revised to read as follows:

Section 2.20 Additional Requirements. Any of the signatory parties may impose standards, including water quality criteria and effluent quality requirements, with respect to waste discharges within its jurisdiction more stringent than those provided by the Comprehensive Plan and these Regulations.

b. Section 2.30 is revised to read as follows:

Section 2.30 Regional Requirements. It shall be the policy of the Commission to promote and encourage planning for regional solutions to water pollution problems including problems derived from both point and non-point sources of pollution. The Commission may recognize that the most efficient and environmentally acceptable regional solution may be small multiple facilities spread throughout a watershed. The use of regional water pollution control facilities and/or institutional arrangements providing optimum combinations of efficiency, reliability and service area will be required throughout the Delaware River Basin to the maximum extent feasible. The Commission will cooperate with industries and state, county and municipal agencies seeking a regional solution to water pollution problems. The Commission may provide planning, and when necessary, constructing, financing and operating services required for regional solutions to water pollution problems where other appropriate agencies do not provide such services.

3. Amend Article 3 of the Administrative Manual - Part III, Water Quality Regulations, the Comprehensive Plan and Article 3 of the Water Code of the Delaware River Basin as follows:

a. Redesignate existing subsection 3.10.3A as 3.10.3B.

b. Subsection 3.10.3B. is redesignated as subsection 3.10.3A. and revised to read as follows:

3.10.3A. Antidegradation of Waters.

1. Interstate Waters

It is the policy of the Commission to maintain the quality of interstate waters, where existing quality is better than the established stream quality objectives, unless it can be affirmatively demonstrated to the Commission that such change is justifiable as a result of necessary economic or social development or to improve significantly another body of water. In implementing this policy, the Commission will require the highest degree of waste treatment determined to be practicable. No change will be considered which would be injurious to any designated present or future use.

2. Special Protection Waters

It is the policy of the Commission that there be no measurable change in existing water quality except towards natural conditions in waters considered by the Commission to have exceptionally high scenic, recreational, ecological, and/or water supply values. Waters with exceptional values could be classified by the Commission as Outstanding Basin Waters or Significant Resource Waters.

In determining waters suitable for classification as Special Protection Waters, the Commission will consider nomination petitions from local, state and federal agencies and governing bodies, and the public for waters potentially meeting the definition of Outstanding Basin Waters and Significant Resource Waters as described in 3.10.3.A.2.a.

The following policies shall apply to waters classified by the Commission as Outstanding Basin Waters or Significant Resource Waters and their drainage areas:

a. Definitions

1). "Outstanding Basin Waters" are interstate and contiguous intrastate waters that are contained within the established boundaries of national parks; national wild, scenic and recreational rivers systems; and/or national wildlife refuges that are considered by the Commission to have exceptionally high scenic, recreational, and ecological values that require special protection.

2). "Significant Resource Waters" are interstate waters considered by the Commission to have exceptionally high scenic, recreational, ecological, and/or water supply uses that require special protection.

3). "Existing Water Quality" is defined as the actual concentration of a water constituent at an in-stream site or sites, as determined through field measurements and laboratory analysis of data collected over a time period determined by the Commission to adequately reflect the natural range of the hydraulic and climatologic factors which affect water quality. Existing water quality shall be described in terms of (a) an annual or seasonal mean of the available water quality data, (b) two-tailed upper and lower 95 percent confidence limits around the mean, and (c) the 10th and 90th percentiles of the data set from which the mean was calculated. Where available data are insufficient to determine existing water quality, existing water quality may be estimated from data obtained from sites within the same ecoregion or from best scientific judgment.

4). "Measurable Change" is defined as an actual or estimated change in a mean (annual or seasonal) in-stream pollutant concentration that is outside the range of the two-tailed upper and lower 95 percent confidence limits that define existing water quality. In the absence of adequate available data, background concentrations will be assumed to be zero and "measurable change" will be based on in-stream concentrations greater than the minimum detectable limits for each parameter.

5). "Public Interest" is a determination of all the positive and negative social, economic and water resource impacts associated with a project affecting a Significant Resource Water. A project that is in the public interest is one that, at a minimum, provides housing, employment, and/or public facilities needed to accommodate the adopted future population, land use, and other goals of a community and region. In general such a project conforms to a locally-adopted growth management plan which is undergoing active implementation by local officials.

6). "Regional Resources Management Plan" is a management plan developed and adopted by the government agency that is assigned primary responsibilities for the overall management of a National park, scenic and recreational river and/or wildlife refuge which contains waters that have been classified by the Commission as Outstanding Basin Waters. A regional resources management plan is one that addresses, among other subjects, the location and general size of allowable wastewater treatment facilities. A regional resources management plan, or applicable portions thereof, will be incorporated into the Commission's Comprehensive Plan after adoption by the agency preparing the plan.

7). "Natural Condition" is the ecological state of a water body that represents conditions without human influence.

8). "Minimum Detectable Limit" is the lowest level of a substance that can be measured in natural waters by a specific analytical method. Minimum Detectable Limit as defined herein, corresponds to the U.S. Environmental Protection Agency's Method Detection Limits (MDL) as described in 40 CFR Part 136, Appendix B.

9). "Non-discharging/Load Reduction Options" are options whereby the amount of wastewater discharged to a surface stream is reduced by (1) instituting load reduction measures involving reductions in pollutants at the source possibly accompanied by water conservation practices to reduce the amount of flow received at a wastewater treatment plant; and/or (2) using land-based wastewater disposal whereby treated wastewater effluent is further treated by percolation and other soil-based processes instead of in-stream processes.

10). "Natural Wastewater Treatment Systems" are soil-based, vegetative and/or aquatic wastewater treatment systems characterized by the use of low energy treatment processes that use and simulate "natural" environmental processes such as primary and secondary productivity, crop production, wetlands, ponds and others.

11). "Non-Point Sources" are sources of pollutants carried by surface and sub-surface runoff that are derived from human activities and land use.

12). "Cumulative Impact" is the net sum of all individual impacts including all point and non-point source impacts.

13). "Boundary Control Points" are locations where monitoring and other activities occur to determine existing water quality, no measurable change, and related pollution control requirements as applicable. Boundary Control Points for Outstanding Basin Waters will generally correspond to federally-established boundaries for National parks, etc. while those for Significant Resource Waters will generally correspond to the confluence of an intrastate tributary with the classified interstate water.

14). "Interstate Special Protection Waters Control Points" are general locations used to assess water quality for purposes of defining and protecting Existing Water Quality.

b. Water Quality Management Policies

1). Outstanding Basin Waters shall be maintained at their existing water quality. Point and non-point sources of pollutants originating from outside the boundaries of stream reaches classified as Outstanding Basin Waters shall be treated as required and then dispersed in the receiving water so that no measurable change occurs at Boundary and Interstate Special Protection Waters Control Points. Point sources of pollutants discharged to Outstanding Basin Waters shall be treated as required and then dispersed in such a manner that complete mixing of effluent with the receiving stream is, for all practical intents and purposes, instantaneous.

2). Unless the Commission finds that the public interest warrants a change in existing water quality, Significant Resource Waters shall not be degraded below existing water quality. Changes in existing water quality will only be considered for limited effluent assimilation. In determining allowable changes to water quality in Significant Resource Waters, the Commission will require the highest possible point and non-point source treatment levels necessary to limit the size and extent of mixing zones.

Point and non-point sources of pollutants originating from outside the boundaries of stream reaches classified as Significant Resource Waters shall be treated as required and then dispersed in the receiving water so that no measurable change occurs at boundary and river control points.

c. Policy on Allowable Discharges

1). Direct discharges of wastewater to Special Protection Waters are discouraged. No new or expanded wastewater discharges or expansions of existing discharges shall be permitted in waters classified as Special Protection Waters until all non-discharge/load reduction alternatives have been fully evaluated and rejected because of technical and/or financial infeasibility.

2). The general number, location and size of future wastewater treatment facilities discharging to Outstanding Basin Waters (if any) shall be developed taking into consideration any adopted regional resource management plan as defined in Section 3.10.3.A.2.a.6. and, on an individual project basis, based on the feasibility of non-discharging options.

3). Discharges to Significant Resource Waters shall only be allowed for circumstances which are demonstrably in the public interest as defined in Section 3.10.3.A.2.a.5).

d. Policies Related to Wastewater Treatment Facilities

1). All wastewater treatment facilities discharging to waters classified as Special Protection Waters shall have available standby power facilities unless it can be shown that a proposed discharge can be interrupted for an extended period with no threat to the water quality of Special Protection Waters.

2). Any wastewater treatment facility discharging to waters classified as Special Protection Waters that is not staffed 24 hours every day shall have a remote alarm that will continuously monitor plant operations whenever the plant is not staffed. The alarm system will be designed to alert someone available with authority and knowledge to take appropriate action.

3). Applicants for wastewater treatment plants discharging to waters classified as Special Protection Waters shall prepare and implement an emergency management plan following the guidance provided in the Water Pollution Control Federation's Manual of Practice SM-8, Emergency Planning for Municipal Wastewater Facilities, the U.S. EPA's Design Criteria for Mechanical, Electric and Fluid System and Component Reliability or other suitable manuals. Emergency management plans shall include an emergency notification procedure covering all affected downstream users.

4). Discharge plumes shall not cause visual impacts in Outstanding Basin Waters.

5). All applicants seeking wastewater treatment project approval under Section 3.8 of the Compact shall satisfactorily prove the infeasibility or overwhelming disadvantages of using natural wastewater treatment technologies.

6). Minimum wastewater treatment requirements for all new and expanding wastewater treatment projects discharging to Special Protection Waters, including projects approved by the Commission after September 1988, will be "Best Demonstrable Technology". The following average effluent criteria define Best Demonstrable Technology:

5-day CBOD:	10 mg/l or less
Dissolved oxygen:	6.0 mg/l or greater
Total suspended solids:	10 mg/l or less
Ammonia-nitrogen:	1.5 mg/l or less
Total nitrogen:	10.0 mg/l or less
Total phosphorus:	2.0 mg/l or less
Fecal coliform:	50/100 ml or less

Ultraviolet light disinfection or an equivalent disinfection process that results in no harm to aquatic life, does not produce toxic chemical residuals, and results in effective bacterial and viral destruction.

e. Policies Concerning the Control of Non-Point Sources

1). It is the goal that non-point sources in the drainage area to waters classified as Special Protection Waters be controlled in such manner that the cumulative impact on water quality of all existing and future non-point source loads is not greater than the impact caused by loads that existed prior to Special Protection Waters classification.

2). All applicants seeking project approval for a project serving new areas under Section 3.8 of the Compact shall:

a. Submit a non-point source control program to prevent increases in pollutant loadings above pre-project conditions in the new service area of the project; and,

b. Demonstrate project compliance with the applicable state Section 319 Non-point Source Management Program as approved by the U.S. Environmental Protection Agency; and,

c. Demonstrate project compliance with any applicable state and local government non-point source control programs.

3). The Commission may require local and county governments to develop and implement watershed non-point source control plans for watersheds that the

Commission identifies as significantly impacting Special Protection Waters, or likely to significantly impact Special Protection Waters in the near future.

f. Policies Regarding Inter-Government Responsibilities

1). Interrelationship of State and Commission Responsibilities.

The applicable state environmental agency shall assure that existing water quality in Special Protection Waters is not measurably changed by the cumulative impact of point and non-point sources of pollution discharged into the intrastate tributary watersheds within its jurisdiction. For water quality management purposes, the state environmental agency and the Commission will jointly develop Boundary Control Points as described in Section 3.10.3.A.2a.13). and g.4).

In performing this responsibility, the state environmental agency shall require that all new or expanding wastewater treatment facilities and existing wastewater treatment plants applying for a discharge permit or permit renewal under the delegated NPDES program to comply with the policies contained in Section 3.10.3.A.2.d. unless it can be demonstrated, after consultation with the Commission, that these requirements are not necessary for the protection of existing water quality in the Special Protection Waters due to distance from Special Protection Waters, time of travel, the existence of water storage impoundments, the waste assimilation characteristics of the receiving stream, and other relevant hydrological and limnological factors.

Nothing in this section precludes the state environmental agency from establishing more stringent requirements for the purpose of protecting receiving stream water quality or managing the total watershed cumulative impacts as measured at Boundary Control Points.

The Commission shall, to the extent practicable, coordinate and oversee all Special Protection Waters activities and assist the efforts of each state environmental agency to control pollutants originating from intrastate tributary watersheds. The Commission shall determine pollution control requirements for discharges to Special Protection Waters; for non-point sources draining directly into Special Protection Waters; and total non-point source loads emanating from intrastate tributary watersheds as measured at Boundary Control Points.

g. Classified Special Protection Waters

1). The following stream reaches are classified as Outstanding Basin Waters:

(a) The Upper Delaware Scenic and Recreational River (Delaware River between River Mile 330.7 and 258.4);

(b) Those portions of tributaries located within the established boundary of the Upper Delaware Scenic and Recreational River Corridor;

(c) The Middle Delaware Scenic and Recreational River (Delaware River between River Miles 250.1 and 209.5);

(d) Those portions of tributaries located within the established boundary of the Delaware Water Gap National Recreation Area.

2). The following stream reaches are classified as Significant Resource Waters:

(a) The Delaware River between River Miles 258.4 (the downstream boundary of the Upper Delaware Scenic and Recreational River) and 250.1 (the upstream boundary of the Delaware Water Gap National Recreation Area).

3). Definitions of Existing water quality for waters classified in 1. and 2. above are presented in Table 1.

4). The location of Boundary and Interstate Special Protection Waters Control Points are described in Table 2.

TABLE 1: DEFINITION OF EXISTING WATER QUALITY IN THE DELAWARE RIVER BETWEEN HANCOCK, NEW YORK AND THE DELAWARE WATER GAP

Part A: Upper Delaware Scenic & Recreational River

PARAMETER	MEAN	95 PERCENT CONFIDENCE LIMITS OF MEAN	10TH AND 90TH PERCENTILES	ADDITIONAL
Dissolved oxygen (mg/l)	9.0	8.9 to 9.2	7.5 and 11.0	Never below 6.0 mg/l (night time); May-Sept; reachwide
BOD_5 (mg/l)	0.67	0.6 to 0.8	0.3 and 1.9	May-Sept; reachwide
Conductivity (umhos/cm)	68	66.6 to 69.3	52 and 88	non-seasonal; reachwide
Fecal coliform (colonies/100 ml)	24	21 to 28	4 and 200	May-Sept; reachwide
Total suspended solids (mg/l)	4.0	[illegible].6 to [illegible].8	2.0 and 16	non-seasonal; reachwide
Total phosphorus (ug/l)	28	27 to 31	18 and 50	non-seasonal; reachwide
Ammonia + ammonium (ug/l)	15	13 to 18	10 and 50	as nitrogen; May-Sept; reachwide
Ammonia + ammonium (ug/l)	22	20 to 25	10 and 60	as nitrogen; non-seasonal; reachwide
Total kjeldahl nitrogen (ug/l)	202	172 to 237	100 and 530	May-Sept; reachwide
Nitrite + nitrate nitrogen (ug/l)	293	256 to 335	123 and 492	May-Sept; reachwide
Hardness (mg/l as $CaCo_3$)	21	19.9 to 22.2	17.0 and 27.0	non-seasonal; reachwide
Biocriteria: Shannon-Wiener	3.6	3.4 to 3.8	2.7 and 4.3	May-Sept; reachwide
Biocriteria: Equitability	0.8	0.7 to 0.9	0.5 and 1.1	May-Sept; reachwide
Biocriteria: EPT	15.5	13.8 to 17.2	8.0 and 24.0	May-Sept; reachwide

PART B: DELAWARE RIVER FROM MILLRIFT THROUGH THE DELAWARE WATER GAP INCLUDING THE MIDDLE DELAWARE SCENIC AND RECREATIONAL RIVER

PARAMETER	MEAN	95 PERCENT CONFIDENCE LIMITS OF MEAN	10TH AND 90TH PERCENTILES	ADDITIONAL
Dissolved oxygen (mg/l)	9.2	9.1 to 9.4	7.4 and 12.8	Never below 6.0 mg/l (night time); May-Sept; reachwide
BOD_5 (mg/l)	0.63	0.6 to 0.7	0.3 and 1.6	May-Sept; reachwide
Conductivity (umhos/cm)	76	75 to 77	60 and 95	non-seasonal; reachwide
Fecal coliform (colonies/100 ml)	47	42 to 53	9 and 272	May-Sept; reachwide
Total suspended solids (mg/l)	3.4	3.0 to 3.8	1.0 and 12.0	non-seasonal; reachwide
Total phosphorus (ug/l)	27	26 to 29	14 and 40	May-Sept; reachwide
Ammonia + ammonium (ug/l)	23	21 to 26	10 and 50	non-seasonal; reachwide
Ammonia + ammonium (ug/l)	41	37 to 44	10 and 187	May-Sept; reachwide
Total kjeldahl nitrogen (ug/l)	293	276 to 312	101 and 860	non-seasonal; reachwide
Total kjeldahl nitrogen (ug/l)	206	189 to 225	100 and 490	May-Sept; reachwide
Nitrite + nitrate nitrogen (ug/l)	246	233 to 260	100 and 490	non-seasonal; reachwide
Nitrite + nitrate nitrogen (ug/l)	206	191 to 223	92 and 392	May-Sept; reachwide
Hardness (mg/l as $CaCo_3$)	24	24 to 25	20 and 30	non-seasonal; reachwide
Biocriteria: Shannon-Wiener	3.6	3.4 to 3.7	3.2 and 4.1	May-Sept; reachwide
Biocriteria: Equitability	0.8	0.7 to 0.9	0.5 and 1.1	May-Sept; reachwide
Biocriteria: EPT	13.9	12.8 to 15.1	8.0 and 20.0	May-Sept; reachwide

PART C: NOTES ON STATISTICS USED TO DEFINE EXISTING WATER QUALITY

The definitions of Existing Water Quality presented in Parts A and B of this table were developed by performing parametric statistical analyses using logarithmic transformation of available water quality data to derive normality. The numbers represent the anti-log of the statistical results and, thus, will differ from numbers generated by using non-transformed data. Means derived from log transformations, for example, will be lower than means derived from non-transformed data. The 95 percent confidence limits were derived from a two-tailed distribution. Biocriteria were not developed using log-transformed data. The three indices used to develop the biocriteria were derived from specialized transformations of the original data, resulting in values that are normally distributed.

Table 2. BOUNDARY AND INTERSTATE SPECIAL PROTECTION WATERS CONTROL POINTS

BOUNDARY	CONTROL POINTS	MAP REFERENCE
Northern Boundary-UDSRR	Delaware River Mile 330.7	DRBC River Mile maps & UDSRR River Management PLan
Eastern Boundary-UDSRR	New York streams in Delaware & Sullivan Counties: Blue Mill; Humphries; Abe Lord; Bouchoux; Pea; Hoolihan; Basket; Hankins; Callicoon; Mitchell Pond; Tenmile; Grassy Swamp; Narrow Falls; York Lake; Beaver Brook; Halfway; Mill; Fish Cabin; Mongaup; Shingle Kill	UDSRR River Management PLan
Western Boundary-UDSRR	Pennsylvania streams in Wayne & Pike Counties: Shingle Hollow; Stockport; Factory; Equinunk; Weston; Little Equinunk; Cooley; Hollister; Schoolhouse; Beaverdam; Calkins; Peggy Run; Masthope; Westcolang; Lackawaxen; Verga Pond; Panther; Shohola; Twin Lakes; Pond Eddy; Bush Kill	UDSRR River Management PLan
Northern Boundary-Eight mile reach between UDSRR and MDSRR	Delaware River Mile 258.4 (railroad crossing at Millrift, Pennsylvania)	DRBC River Mile maps; UDSRR River Management Plan
Eastern & Western Boundaries-Eight mile reach between UDSRR & MDSRR	Confluence of New York streams (Orange County); Pennsylvania streams (Pike County); and New Jersey streams (Sussex County) with the Delaware River: Sparrowbush; Neversink; Cummins	U.S.G.S. Port Jervis South & North topographic maps
Northern Boundary-DWGNRA	Delaware River Mile 250.1 near the confluence of Cummins Creek	DRBC River Mile map & DWGNRA Tract Map
Eastern Boundary-DWGNRA	New Jersey streams in Sussex County: Shimers; White; Big Flatbrook; Little Flatbrook	DWGNRA Tract Maps
Western Boundary-DWGNRA	Pennsylvania streams in Pike & Monroe Counties: Crawford Branch; Vandermark; Sawkill; Raymondskill; Conashugh; Dry; Adams; Dingmans; Hornbeck; Deckers; Alicias; Brodhead-Hellers; Hellers; Toms; Denmark; Little Bushkill; Bushkill; Shawnee; Brodhead; Cherry; Caledonia; Slateford	DWGNRA Tract Maps

SPECIAL PROTECTION WATERS	CONTROL POINTS (General Locations)	RIVER MILE
Upper Delaware Scenic & Recreational River	Buckingham Access Area	325
	Lordville Bridge	322
	Kellams Bridge	313
	Callicoon Access Areas	303
	Damascus/Cochecton	298
	Skinners Falls	295
	Narrowsburg area	290
	Ten Mile River Access Area	284
	Lackawaxen Access Area	277
	Barryville/Shohola Bridge	273
	Pond Eddy Bridge	266
Delaware River between the UDSRR & the DWGNRA	Millrift	258
	Matamoras/Port Jervis	254
	Northern boundary-DWGNRA	250
Delaware Water Gap National Recreation Area	Milford Beach	247
	Dingmans Access Area	239
	Eshback Access Area	232
	Bushkill Access Area	228
	Depew Access Area	221
	Smithfield Beach	218
	Worthington S.F. Access	215
	Kittatinny Visitor Center	211
	Upstream end of Arrow Island	210

c. Subsection 3.10.4F.1. is revised to read as follows:

1. Discharges to intermittent streams may be permitted by the Commission only if the applicant can demonstrate that there is no reasonable economical alternative, the project is environmentally acceptable, and would not violate the stream quality objectives set forth in Section 3.10.3B.1.a.

d. Section 3.50 is deleted.

Amendment to the Administrative Manual - Rules of Practice and Procedure

It is proposed to amend the Administrative Manual - Rules of Practice and Procedure as follows:

Subsection 2 - 3.5(a)(4) and (5) are revised to read as follows:

(4) The construction of new municipal sewage treatment facilities or alteration or addition to existing municipal sewage treatment facilities when the design capacity of such facilities is less than a daily average rate of 10,000 gallons per day in the drainage area to Outstanding Basin Waters and Significant Resource Waters or less than 50,000 gallons per day elsewhere in the Basin; and all local sewage collector systems and improvements discharging into authorized trunk sewage systems;

(5) The construction of new facilities or alteration or addition to existing facilities for the direct discharge to surface or ground waters of industrial wastewater having design capacity of less than 10,000 gallons per day in the drainage area to Outstanding Basin Waters and Significant Resource Waters or less than 50,000 gallons per day elsewhere in the Basin; except where such wastewater contains toxic concentrations of waste materials;

Delaware River Basin Compact, 75 Stat. 688.

Susan M. Weisman
Secretary
March 10, 1992